PB84-118553

Water Resources Data for Virginia, Water Year 1982

(U.S.) Geological Survey
Richmond, VA

May 83

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National Technical Information Service
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Water resources data for the 1982 water year for Virginia consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 200 gaging stations; stage only at 1 gaging station; stage and contents at 10 lakes and reservoirs; water quality at 32 gaging stations and 8 wells; and water levels at 59 observation wells. Also included are data for 73 crest-stage partial-record stations. Locations of these sites are shown on Figures 5 and 6. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 41 coal-monitoring partial-record stations and at 199 low-flow partial-record stations. Miscellaneous data were collected at 119 measuring sites and 94 water-quality sampling sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

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*Virginia, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

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DEPARTMENT OF THE INTERIOR
March 3 1849

Water Resources Data
Virginia
Water Year 1982

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-82-1
Prepared in cooperation with the State of Virginia
and with other agencies

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U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

CALENDAR FOR WATER YEAR 1982

1981

OCTOBER

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1982

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U.S. DEPARTMENT OF THE INTERIOR
March 3 1849

Water Resources Data Virginia

Water Year 1982

by Byron J. Prugh, Jr., Fred J. Easton, and Dennis D. Lynch

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-82-1
Prepared in cooperation with the State of Virginia
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Virginia write to

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U.S. Geological Survey
Room 304, 200 West Grace Street
Richmond, Virginia 23220

or

Virginia State Water Control Board
Suite 210, 1936 Arlington Blvd.
Charlottesville, Virginia 22903

1983

PREFACE

The annual hydrologic data report of Virginia is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey and the Virginia State Water Control Board who collected, compiled, analyzed, verified, and organized the data. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following offices contributed significantly to the preparation and completion of this report:

U.S. Geological Survey, Richmond, VA
U.S. Geological Survey, Marion, VA
U.S. Geological Survey, Charlottesville, VA
Virginia State Water Control Board, Charlottesville, VA

This report was prepared in cooperation with the State of Virginia and with other agencies under the general supervision of Herbert J. Freiberger, Chief of the Mid-Atlantic District, and Gary S. Anderson, Acting Chief, Virginia Office.

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GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (p) pesticides, (t) daily water temperature, (s) sediment, (e) elevation, gage heights, or contents]

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HALIFAX COUNTY

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HOPEWELL (INDEPENDENT CITY)

Well 52G1 430

ISLE OF WIGHT COUNTY

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INTRODUCTION

Water resources data for the 1982 water year for Virginia consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 200 gaging stations; stage only at 1 gaging station; stage and contents at 10 lakes and reservoirs; water quality at 32 gaging stations and 8 wells; and water levels at 59 observation wells. Also included are data for 73 crest-stage partial-record stations. Locations of these sites are shown on figures 5 and 6. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 41 coal-monitoring partial-record stations and 199 low-flow partial-record stations. Miscellaneous data were collected at 119 measuring sites and 94 water-quality sampling sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report VA-82-1." These water-data reports are for sale, in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the office chief at the address given on the back of the title page or by telephone (804) 771-2427.

COOPERATION

The U.S. Geological Survey and organizations of the State of Virginia have had cooperative agreements for the systematic collection of streamflow records since 1925, for ground-water levels from 1931 to 1957 and since 1967, and for water-quality records from 1944 to 1957 and since 1967. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Virginia State Water Control Board, Richard N. Burton, acting executive director.
Virginia Department of Highways and Transportation, Harold C. King, commissioner.
City of Alexandria, Douglas Harman, city manager.
City of Newport News, C. C. Crowder, director, Department of Public Utilities.
City of Roanoke, Kit B. Kiser, director, Utilities and Operations.
City of Staunton, R. Gene McCombs, city manager.
Southeastern Public Service Authority, Durwood S. Curling, executive director.
James City County, Wayland Bass, director, Department of Public Works.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 63 gaging stations and 4 water-quality stations published in this report.

Under a cooperative agreement covering the Tennessee River basin, the Tennessee Valley Authority furnished financial assistance for the operation of 3 gaging stations, the records for which are published herein.

Assistance was also furnished by the Water Quality Office, Environmental Protection Agency.

The Appalachian Power Company and the City of Radford aided in collecting records.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

The 1982 water year in Virginia was a transitional year which bridged the gap between the record-setting low flows of 1981 and the consistently above-average flows observed during the first half of 1983. The water year began with a continuation of the drought that started in the summer of 1980. Several sites in the Roanoke and Dan River basins set new record lows for average monthly streamflows in November. Flows began to increase in January, and by February, streamflows were well above normal. A new record high for the month of February was established for the Rapidan River near Culpeper. After February, streamflows declined and April and May were below normal. June streamflows increased dramatically and numerous sites in the Roanoke, Rappahannock, and James River basins had average monthly flows second only to those generated by Hurricane Agnes in 1972. The following table presents monthly mean flow for six gaging stations representative of these three basins.

Gaging station	Basin	Mean flow June 1982 (cfs)	Rank	Year record high occurred	Length of record (years)
Dan River at Danville, Va.	Roanoke River	4240	2nd highest	1972	48
Roanoke River at Randolph, Va.	Roanoke River	4970	2nd highest	1972	41
Rappahannock River at Remington, Va.	Rappahannock River	1450	2nd highest	1972	40
Rapidan River near Culpeper, Va.	Rappahannock River	1380	2nd highest	1972	52
Rivanna River at Palmyra, Va.	James River	1660	3rd highest	1972	48
James River near Buchanan, Va.	James River	5250	3rd highest	1972	84

Following the near-record highs in July, streamflows generally declined for the remainder of the water year. The exceptionally low flows during the fall months were balanced by the above-average flows in February and in the period June through August. The net result was that the annual mean flows for the 1982 water year were near normal. The following table shows the near-normal annual flow conditions that existed at six representative stations across the State.

Gaging Station	Portion of State	Annual mean flow for 1982 (cfs)	Percent of median annual flow	Length of record (years)
Nottoway River near Stony Creek, Va.	Southeast	496	100	52
NF Holston River at Saltville, Va.	Southwest	319	107	52
James River at Buchanan, Va.	Western	2360	99	84
Slate River near Arvonia, Va.	Central	229	104	65
Rapidan River near Culpeper, Va.	Northeast	508	99	51
SF Shenandoah River at Front Royal, Va.	Northwest	1470	103	82

Ground-water levels began the water year at record low levels at the Tyler index well in Louisa County. Other index wells in Fairfax County and in the city of Colonial Heights were also well below normal for that time of year. The below-normal conditions persisted through the entire water year at the Tyler well and new record monthly lows and all-time lows were successively set in October, November, and December. The index well in Colonial Heights rose to above-normal levels in March and continued above normal for the remainder of the water year. The index well in Fairfax County began the year at near-record low levels and remained below normal for almost the entire year, the exception being at the end of August when the water level briefly rose above normal for the first time in 22 months. Water levels at three index wells began to return to their normal seasonal trends in 1982 and were within 0.6 foot of normal by the end of the water year.

Dissolved-solids concentrations at most stations during the 1982 water year were near normal as a result of near-normal flow conditions. The mean daily concentration at James River at Buchanan for this period was the same as for the previous 10 years.

Suspended-sediment loads in the State were also normal for this period. A large increase in the load of suspended sediment between the drought year of 1981 and the 1982 water year is evident for Rappahannock River at Remington. Trends in specific conductance (a measure of dissolved-solids concentration) and annual suspended-sediment load are given in the following table.

	Mean discharge (cfs)			Annual suspended-sediment load (tons)			Mean specific conductance (umhos/cm)		
Gaging Station	Previous 10 years	1981	1982	Previous 10 years	1981	1982	Previous 10 years	1981	1982
Rappahannock River at Remington, Va.	831	251	570	135,000	19,100	139,000	66	78	74
James River at Buchanan, Va.	2,770	1,090	2,360	-	-	-	290	400	290

Water temperatures throughout the State were normal to near normal for this period. Average temperatures for Rappahannock River at Remington were 15.0°C, one degree higher than the mean for the previous ten years.

Concentrations of trace metals and residues of pesticides were nearly always far below critical concentrations for various uses. However, detectable concentrations of chlordane, DDD, DDE, DDT, and dieldrin were found in the bottom sediments of Blackwater River near Franklin.

RECORDS COLLECTED BY THE STATE OF VIRGINIA

In addition to data collected by the U.S. Geological Survey, there are included herein records for 103 gaging stations and 17 index wells operated by the Virginia State Water Control Board. These records are published as furnished and are acknowledged in the "COOPERATION" paragraph of each individual station. The State Water Control Board is under the direction of Richard N. Burton, acting executive director. Published material for the gaging-station records and the ground-water wells is supplied, respectively, through the Bureau of Surveillance and Field Studies, Raymond E. Bowles, director, and the Bureau of Water Control Management, Dale F. Jones, director.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System of Units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved is that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg $C/(m^2.time)$ for periphyton and macrophytes and mg $C/(m^3.time)$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg $O_2/(m^2.time)$ for periphyton and macrophytes and mg $O_2/(m^3.time)$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material refers to the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample.

To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 03041000, which appears just to the left of the station name, includes the 2-digit part number "03" plus the 6-digit downstream order number "041000".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude and the next 7 digits denote degrees, minutes, and seconds of longitude of a point believed to represent the location of the site; the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph. See figure 1.

A second well-numbering system used in Virginia utilizes 7 1/2-minute quadrangles within the State. The quadrangles are numbered from west to east, and lettered from south to north, omitting the letters "I" and "O." The designation for each quadrangle is determined by the method "Read Right, Up." Wells are numbered serially within each quadrangle. This local well number is shown immediately after the primary well number.

Well records furnished by the State of Virginia also include the well number that is based on an indexing system used by the State Water Control Board.

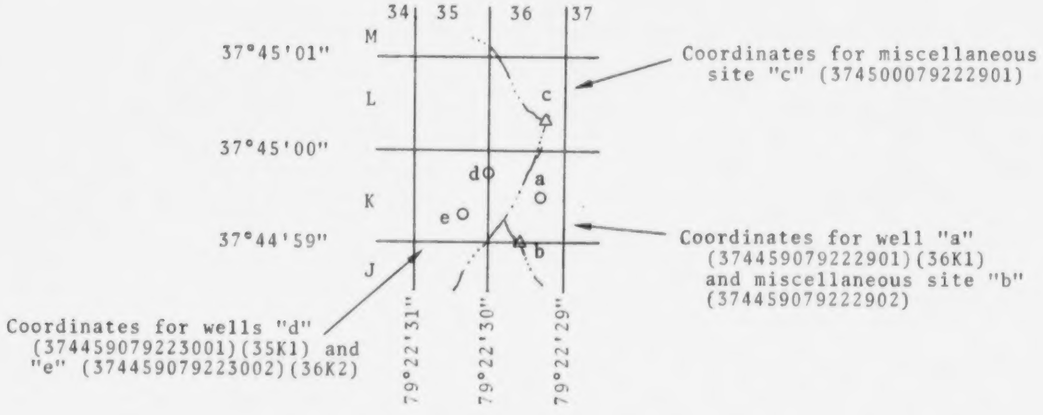
34
35
36
37
M
L
K
J
37°45'01"
37°45'00"
37°44'59"
79°22'31"
79°22'30"
79°22'29"
a
b
c
d
e
Coordinates for miscellaneous site "c" (374500079222901)
Coordinates for well "a" (374459079222901)(36K1) and miscellaneous site "b" (374459079222902)
Coordinates for wells "d" (374459079223001)(35K1) and "e" (374459079223002)(36K2)

Figure 1. System for numbering wells and miscellaneous sites

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revisions, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 6.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

Those records which have been computed and furnished by the Virginia State Water Control Board are identified under "COOPERATION."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following "EXTREMES FOR THE CURRENT YEAR," for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharges are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation, or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the offices whose addresses are given on the back of the title page of this report. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22902, maintains an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S.G.S. Virginia office whose address is given on the back of the title page of this report.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number and (2) a local number that is provided for local needs (see figure 1). The 15-digit number is an identifier, formed initially from the latitude and longitude of a point believed to represent the location of the site. This site identification number, once assigned, is a pure number and has no locational significance. It is used primarily as an internal control number within the computer files.

Measurements are made in many types of wells under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will insure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 (NGVD) or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and at the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation,* by H. H. Stevens,Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

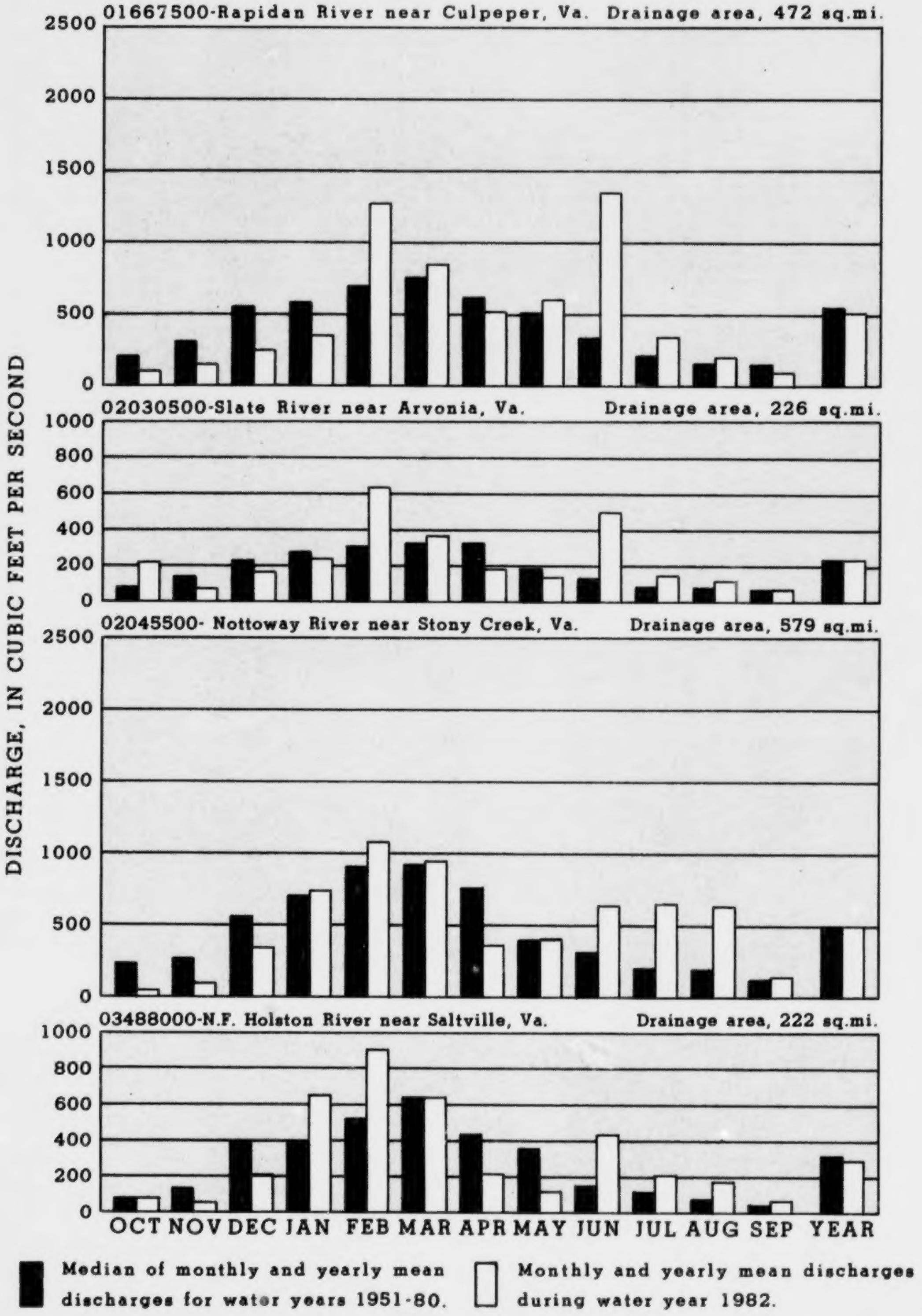

Figure 2. -- Discharge during 1982 water year compared with median discharge for period 1951-80 for four representative gaging stations.

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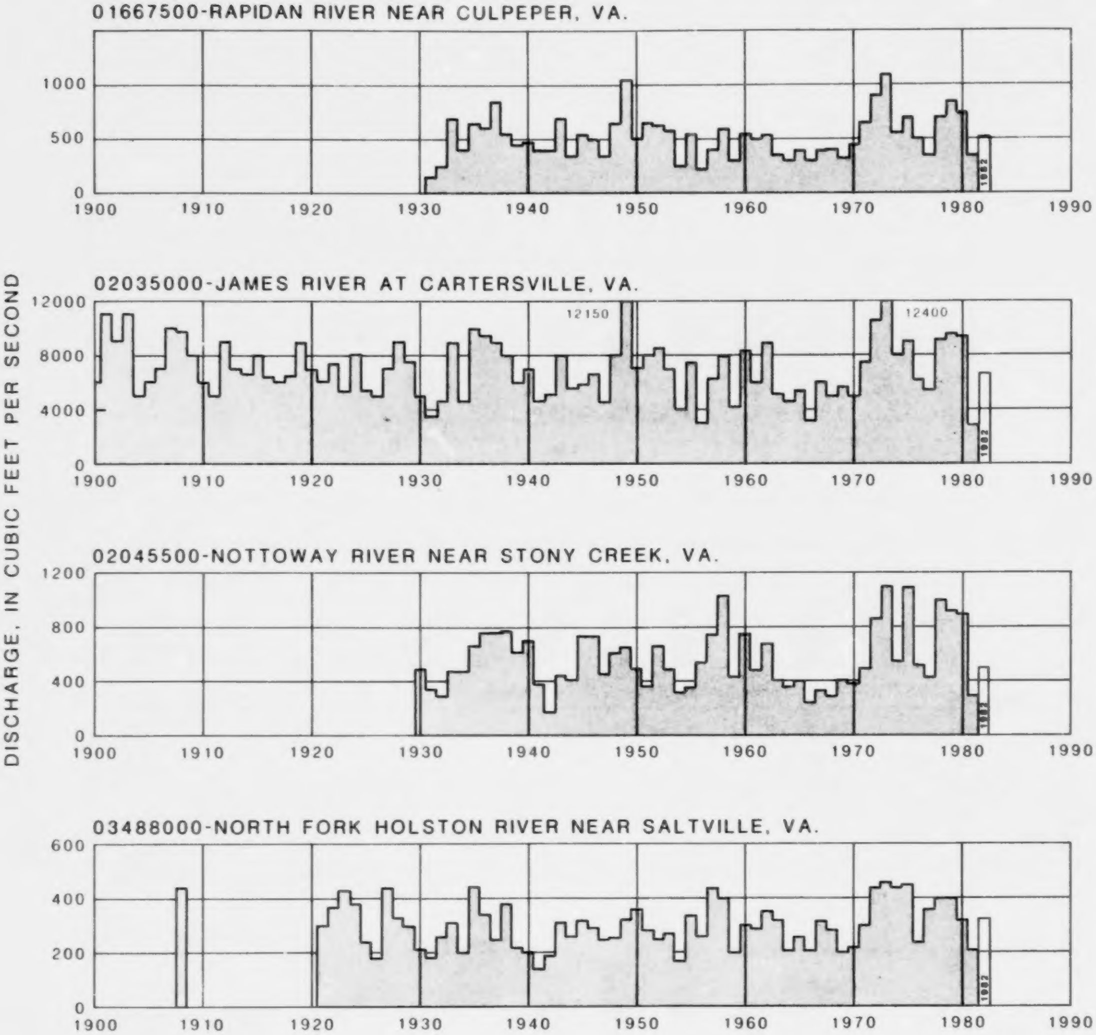
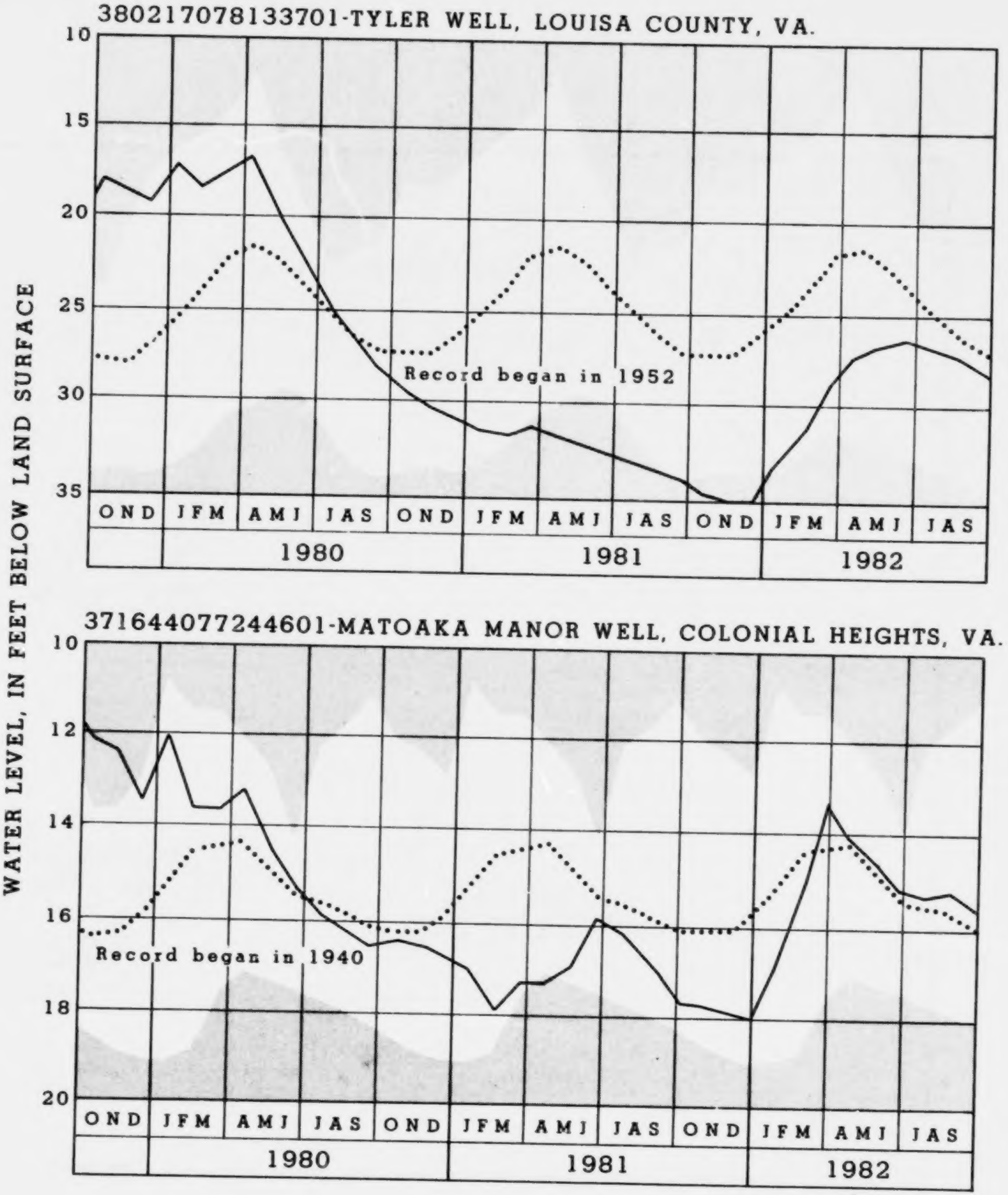


Figure 3. -- Annual mean discharge at selected gaging stations.



UNSHADED AREA — Range between highest and lowest recorded monthly water levels, prior to the indicated year.

SOLID LINE — Near monthend water level for the indicated year.

DOTTED LINE — Average of the recorded monthly water levels, prior to the indicated year.

Figure 4. -- Monthly ground-water levels at key observation wells.

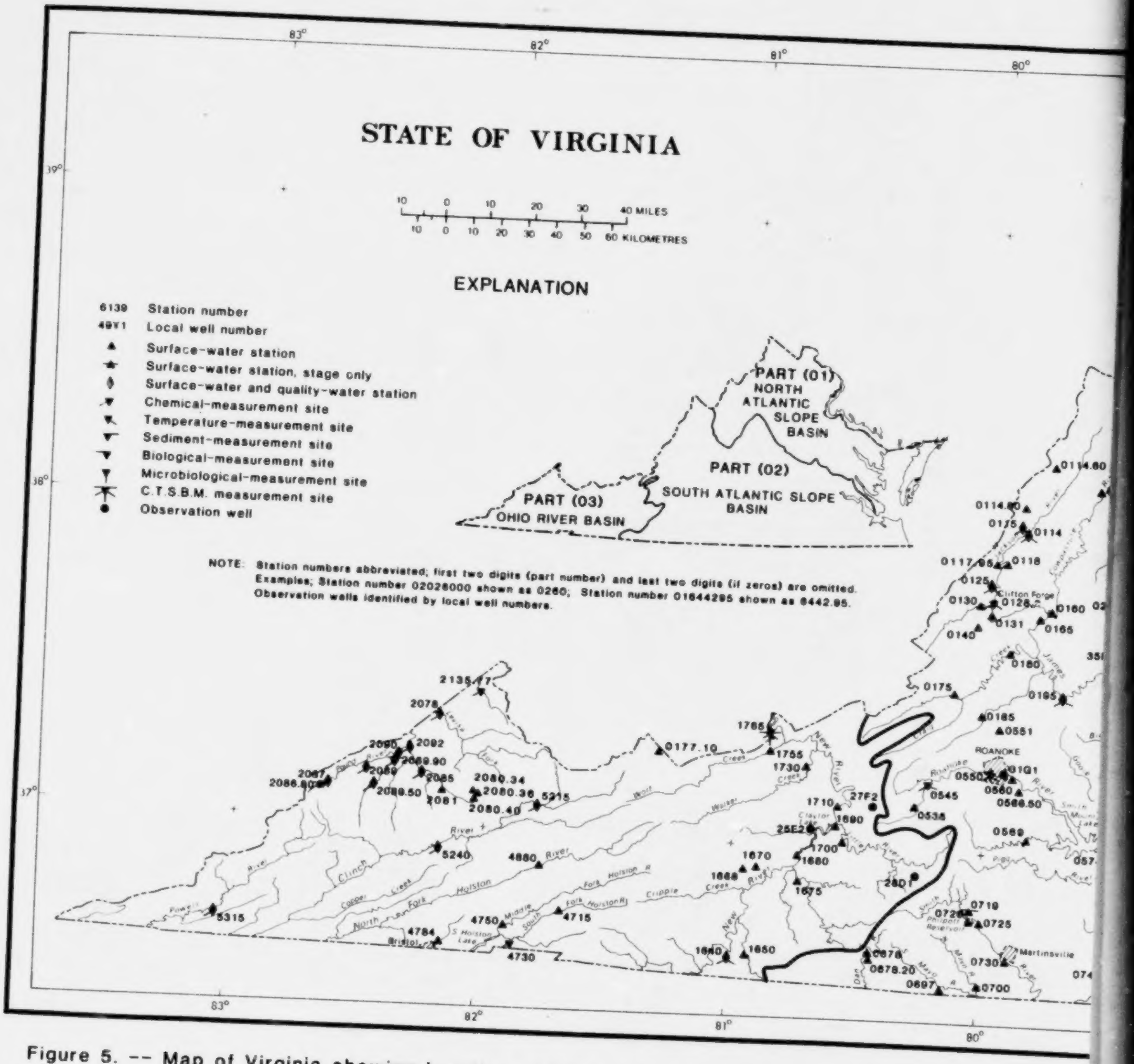
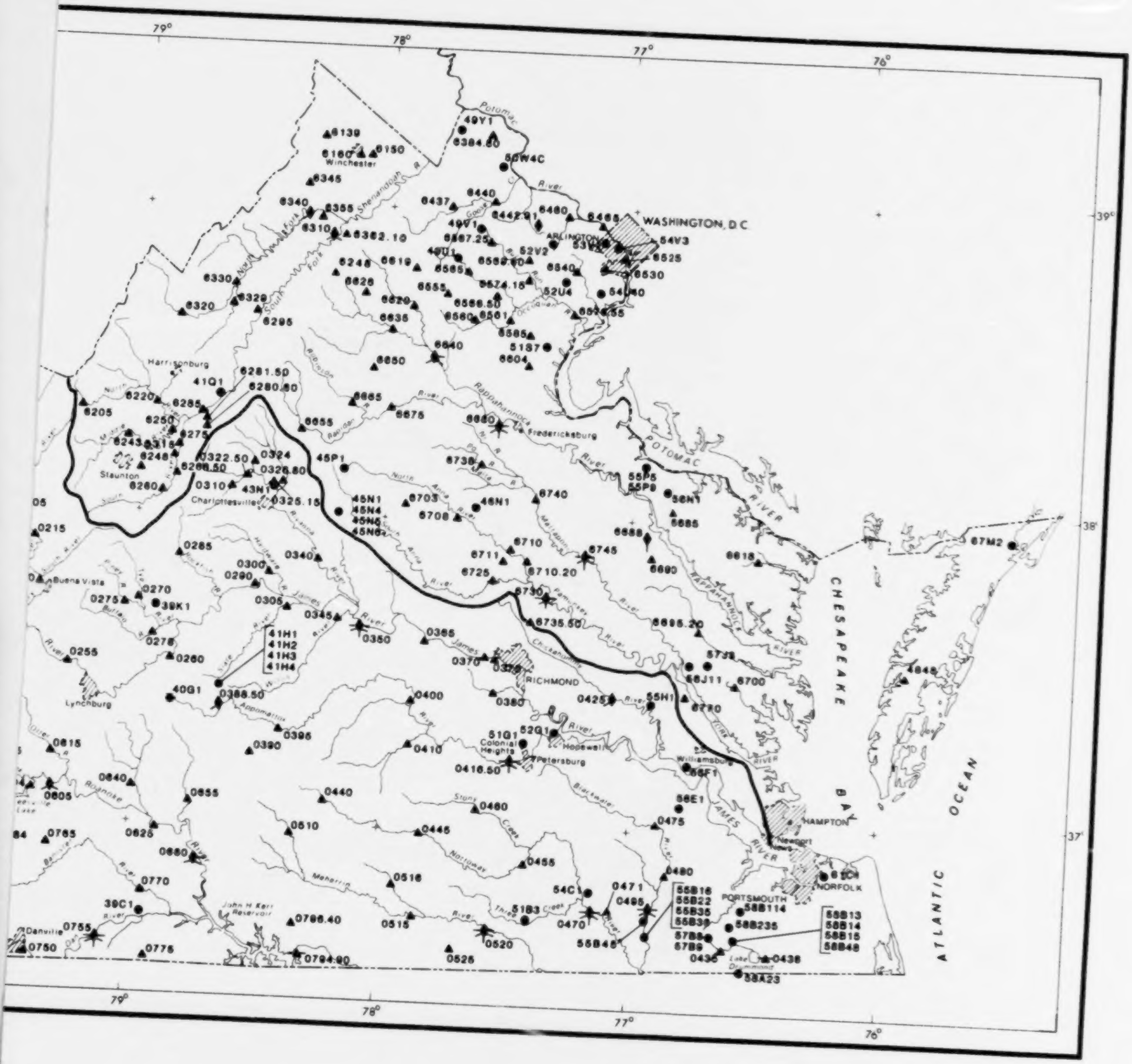

STATE OF VIRGINIA
10 0 10 20 30 40 MILES
10 0 10 20 30 40 50 60 KILOMETRES
EXPLANATION
6139 Station number
49Y1 Local well number
Surface-water station
Surface-water station, stage only
Surface-water and quality-water station
Chemical-measurement site
Temperature-measurement site
Sediment-measurement site
Biological-measurement site
Microbiological-measurement site
C.T.S.B.M. measurement site
Observation well
PART (01) NORTH ATLANTIC SLOPE BASIN
PART (02) SOUTH ATLANTIC SLOPE BASIN
PART (03) OHIO RIVER BASIN
NOTE: Station numbers abbreviated; first two digits (part number) and last two digits (if zeros) are omitted. Examples; Station number 02026000 shown as 0260; Station number 01644295 shown as 6442.95. Observation wells identified by local well numbers.
83°
82°
81°
80°
39°
38°
37°
ROANOKE
Clifton Forge
Martinsville
Bristol
Clinch
Holston
New River
Roanoke River
James
Smith
Dan
Powell
Walker
Wolf
Cripple Creek
S Holston Lake
Philpott Reservoir
Claytor Lake

Figure 5. -- Map of Virginia showing location of data-collection stations.


79°
78°
77°
76°
39°
38°
37°
WASHINGTON, D.C.
ARLINGTON
Winchester
Harrisonburg
Staunton
Charlottesville
Buena Vista
Lynchburg
Fredericksburg
RICHMOND
Colonial Heights
Petersburg
Hopewell
Williamsburg
HAMPTON
Newport
PORTSMOUTH
NORFOLK
Danville
John H. Kerr Reservoir
Lake Drummond
Potomac River
POTOMAC RIVER
Shenandoah R.
Rappahannock
RAPPAHANNOCK RIVER
James River
JAMES RIVER
YORK RIVER
Appomattox
Roanoke
Meherrin
Nottoway
Blackwater
Stony Creek
Chickahominy
North Anna
Mattaponi
Pamunkey River
Occoquan
CHESAPEAKE BAY
ATLANTIC OCEAN
6139
6150
6160
6345
6340
6355
6310
6362.10
6330
6329
6320
6295
49Y1
6384.50
50W4C
6437
6440
6460
6465
6442.91
49V1
6587.25
6619
48U1
6565
6625
6620
6635
6555
6566.50
6560
6561
52V2
6540
52U4
54V3
6525
6530
6585
51S7
6604
6640
6650
6665
6675
6680
41Q1
6281.50
6280.50
6220
6205
6285
6250
6275
6243
6248
6260
6268.50
0322.50
0324
0326.80
0310
43N1
0325.15
6655
45P1
45N1
45N4
45N6
6703
6708
46N1
6730
6740
6710
6711
6725
6710.20
6745
6688
6690
55P5
55P9
58N1
6685
6616
67M2
0215
0285
0300
0290
0340
0270
0275
39K1
0305
0345
0350
0278
0255
0260
41H1
41H2
41H3
41H4
40G1
0388.50
0365
0370
0375
0380
6735.50
6695.20
5731
55J11
6700
0400
0425
55H1
6730
0395
0390
0410
51Q1
52Q1
0416.50
6646
0615
0640
0605
0655
0440
0460
56F1
56E1
0475
0625
0660
0765
0510
0445
0455
0480
0770
39C1
0755
0750
0775
0516
0515
0520
0525
0796.40
0794.90
54C1
0471
0495
0470
51B3
55B45
55B16
55B22
55B35
55B39
58B114
58B235
57B5
57B9
0436
0438
58A23
55B13
58B14
58B15
58B48
61C1

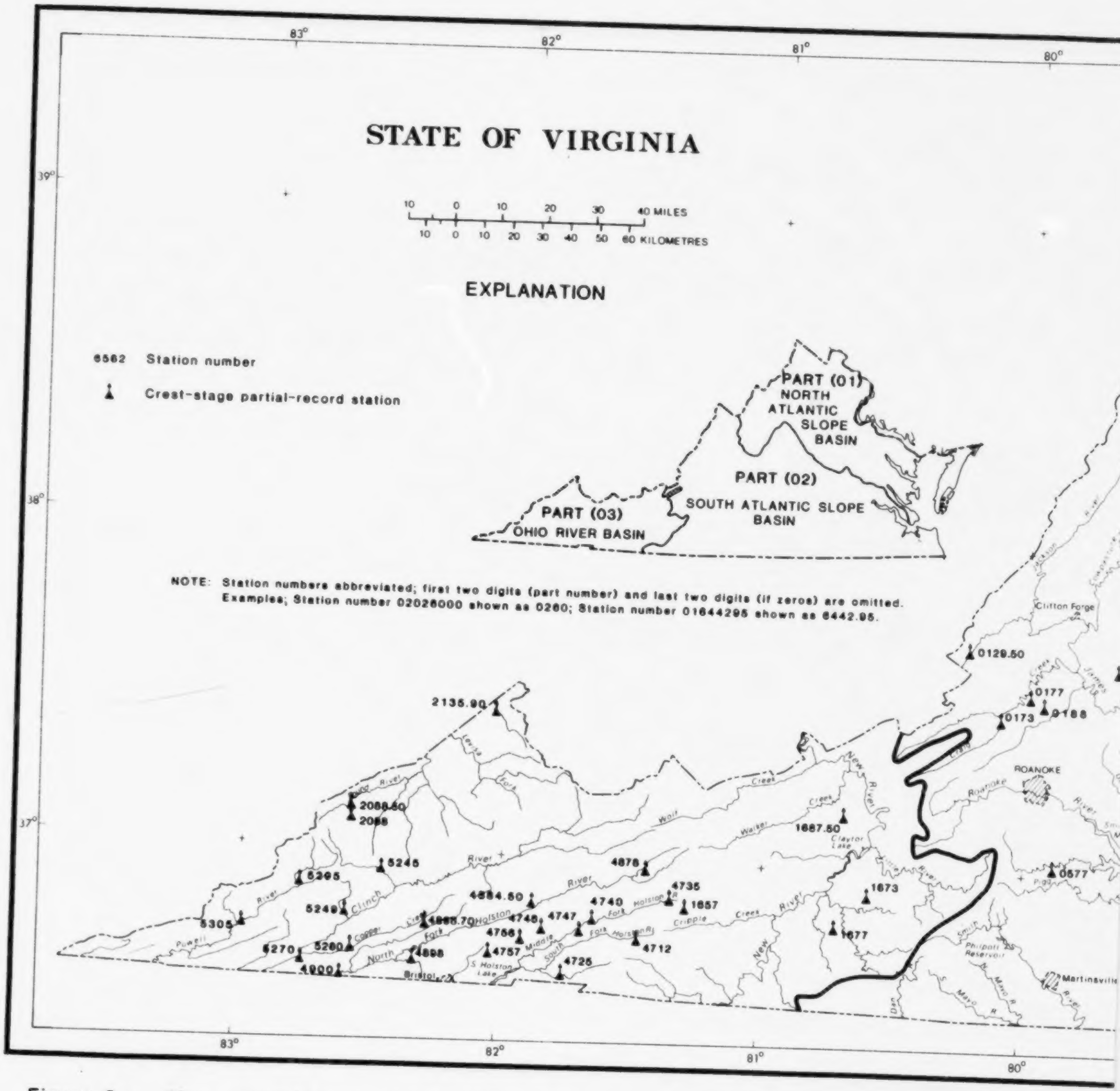
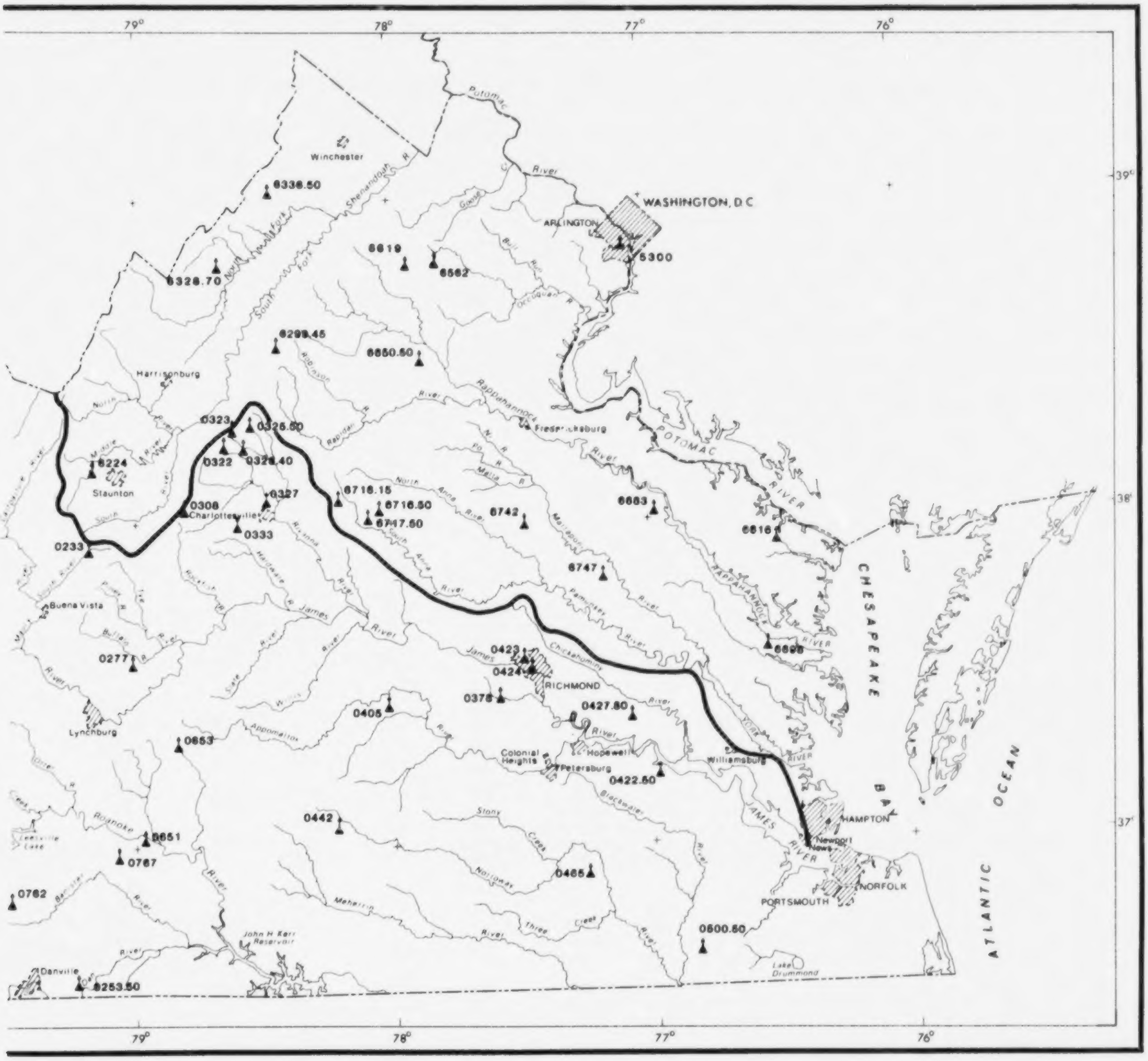


Figure 6. -- Map of Virginia showing location of crest-stage partial-record stations.

WATER RESOURCES DATA FOR VIRGINIA, 1982



HYDROLOGIC-DATA STATION RECORDS

NORTH ATLANTIC SLOPE BASINS

NASSAWADOX CREEK BASIN

01484800 GUY CREEK NEAR NASSAWADOX, VA

LOCATION.--Lat 37°30'08", long 75°52'22", Northampton County, Hydrologic Unit 02080109, on left bank 25 ft (8 m) upstream from bridge on State Highway 606, 1.9 mi (3.1 km) northwest of Nassawadox, and 2.1 mi (3.4 km) upstream from mouth.

DRAINAGE AREA.--1.72 mi² (4.45 km²).

PERIOD OF RECORD.--November 1963 to current year.

GAGE.--Water-stage recorder and wooden control. Datum of gage is 11.67 ft (3.557 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--18 years (water years 1965-82), 1.33 ft³/s (0.038 m³/s), 10.50 in/yr (267 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78 ft³/s (2.21 m³/s) July 31, 1979, gage height, 5.28 ft (1.609 m); no flow at times in 1964, 1966, and 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 21	1245	22	0.62	3.11	0.948	Aug. 11	2015	*42	1.19	4.19	1.277

Minimum daily discharge, 0.07 ft³/s (0.002 m³/s) June 25, July 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.19	.29	5.5	2.3	3.6	2.3	1.7	.43	.21	2.6	.79
2	.29	.21	.43	3.6	2.2	3.0	2.1	1.4	.48	.17	1.3	.79
3	.22	.20	.38	3.3	3.0	2.7	2.1	1.3	.43	.17	.79	.70
4	.20	.22	.33	6.8	2.5	2.3	1.9	1.2	.89	.21	.55	.62
5	.14	.25	.43	4.7	2.1	2.3	1.7	1.1	1.4	.17	.43	.62
6	.15	.43	.33	3.4	2.1	4.9	2.1	1.1	.89	.14	.43	.62
7	.17	.34	.29	3.0	1.7	8.8	1.7	.99	.62	.14	.70	.55
8	.13	.32	.29	2.6	1.6	8.1	1.6	.99	.48	.14	3.1	.55
9	.15	.30	.25	2.3	1.7	4.5	2.3	.89	.38	.21	4.4	.48
10	.17	.32	.25	1.9	1.8	3.7	2.3	.79	.25	.17	5.2	.55
11	.17	.33	.25	1.6	1.6	4.4	1.9	.79	.21	.21	16	.48
12	.15	.33	.25	1.4	1.3	4.1	1.7	.70	.21	.14	21	.48
13	.11	.33	.25	1.4	3.3	3.4	1.7	.62	.38	.14	6.8	.48
14	.11	.38	.25	1.8	3.3	2.8	1.6	.70	.38	.89	3.7	.48
15	.12	.43	3.6	2.2	2.8	4.7	1.6	.70	.21	.43	2.6	.48
16	.12	.43	4.1	2.3	3.0	8.1	1.4	.62	.21	.29	1.9	.48
17	.10	.55	2.3	2.2	4.4	6.5	1.4	.62	.21	.21	1.7	.48
18	.14	.48	2.1	1.8	5.2	4.2	1.6	.62	.21	.17	1.4	.48
19	.23	.38	1.8	1.7	4.4	3.6	1.4	.62	.48	.14	1.3	.48
20	.21	.33	1.6	1.7	3.7	3.9	1.2	.48	.33	.11	1.1	.79
21	.23	.29	1.3	2.0	3.4	15	1.2	.43	.21	.07	1.1	.89
22	.19	.33	1.3	2.2	2.8	8.4	1.1	.48	.21	.07	1.2	.79
23	.22	.33	1.4	9.8	2.3	4.9	.99	.48	.14	.48	.99	.55
24	.40	.33	1.2	10	2.3	3.9	.99	.55	.11	.29	.79	.43
25	.70	.33	2.3	4.9	1.9	3.4	.99	.62	.07	.17	.79	.43
26	.33	.33	2.8	3.7	1.8	3.1	3.0	.62	.48	.11	.79	.79
27	.22	.33	2.8	2.8	2.5	2.7	4.4	.55	1.6	.11	.70	1.1
28	.19	.33	2.2	2.6	5.5	2.3	3.0	.48	.55	.11	2.2	.70
29	.17	.33	1.8	2.5	---	2.2	2.3	.43	.38	.21	1.3	.62
30	.16	.33	1.6	2.3	---	2.2	1.9	.62	.33	.21	1.1	.55
31	.17	---	1.4	2.3	---	2.1	---	.48	---	5.3	.89	---
TOTAL	6.20	10.01	39.87	100.3	76.5	139.8	55.47	23.67	13.16	11.59	88.85	18.23
MEAN	.20	.33	1.29	3.24	2.73	4.51	1.85	.76	.44	.37	2.87	.61
MAX	.70	.55	4.1	10	5.5	15	4.4	1.7	1.6	5.3	21	1.1
MIN	.10	.19	.25	1.4	1.3	2.1	.99	.43	.07	.07	.43	.43
CFSM	.12	.19	.75	1.88	1.59	2.62	1.08	.44	.26	.22	1.67	.36
IN.	.13	.22	.86	2.17	1.65	3.02	1.20	.51	.28	.25	1.92	.39

CAL YR 1981 TOTAL 211.33 MEAN .58 MAX 20 MIN .03 CFSM .34 IN 4.57
WTR YR 1982 TOTAL 583.65 MEAN 1.60 MAX 21 MIN .07 CFSM .93 IN 12.62

01613900 HOGUE CREEK NEAR HAYFIELD, VA

LOCATION.--Lat 39°12'52", long 78°17'18", Frederick County, Hydrologic Unit 02070004, on right bank 15 ft (5 m) upstream from bridge on State Highway 614, 0.8 mi (1.3 km) upstream from Gap Run, and 1.3 mi (2.1 km) southeast of Hayfield.

DRAINAGE AREA.--15.0 mi^2 (38.8 km^2).

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 668.60 ft (203.789 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 14.7 ft^3/s (0.416 m^3/s), 13.31 in/yr (338 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,760 ft^3/s (78.2 m^3/s) June 22, 1972, gage height, 8.85 ft (2.697 m), from rating curve extended above 870 ft^3/s (25 m^3/s); no flow for part of Sept. 14, 1968, cause unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft^3/s (11 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 16	2030	444	12.6	3.38	1.030	June 13	0900	*1380	39.1	6.03	1.838
May 22	0100	678	19.2	4.11	1.253						

Minimum daily discharge, 0.53 ft^3/s (0.015 m^3/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	2.2	2.8	7.6	32	16	12	18	43	3.1	1.5	1.3
2	.79	2.2	7.2	8.4	31	15	11	15	52	3.1	1.4	1.3
3	.66	1.7	6.4	8.9	120	14	12	13	65	4.9	1.2	1.2
4	.53	1.6	5.6	61	89	12	11	12	73	5.2	1.4	1.3
5	.53	1.6	4.4	37	55	12	9.2	10	188	3.6	1.7	1.3
6	.92	2.8	3.9	23	35	11	9.5	9.5	96	3.1	1.4	1.2
7	.92	2.5	3.6	18	26	26	9.5	8.9	62	2.9	1.7	1.1
8	.92	2.8	3.6	14	21	33	9.2	9.8	38	2.7	5.8	1.1
9	.92	2.0	3.0	10	21	28	9.5	9.2	27	2.5	5.2	1.1
10	.92	1.7	2.8	8.0	19	24	11	8.4	73	2.5	3.6	1.2
11	.92	1.7	2.5	6.5	15	23	9.8	7.5	48	2.5	3.1	1.3
12	1.0	1.6	2.5	5.4	15	55	8.9	6.9	34	2.5	2.9	1.3
13	1.0	1.7	2.5	4.5	16	37	8.6	6.6	587	2.2	2.5	1.2
14	1.0	2.0	2.8	3.8	16	26	8.9	5.9	155	2.4	2.7	1.3
15	1.0	1.6	4.4	3.3	16	26	10	5.2	68	2.5	2.4	1.5
16	1.0	1.6	4.4	2.8	36	146	11	4.9	55	2.9	2.5	1.5
17	1.0	2.2	4.4	2.5	117	186	12	4.6	63	3.4	2.5	1.3
18	.92	2.5	4.1	2.2	75	76	15	4.4	31	3.3	2.2	1.0
19	1.2	2.5	4.1	2.1	52	49	12	4.9	21	4.9	2.2	1.0
20	1.0	1.7	3.8	2.0	87	99	12	5.4	15	5.2	2.4	1.1
21	1.0	1.7	3.5	2.1	120	112	12	4.6	12	3.4	2.2	1.2
22	.92	2.2	3.5	2.1	82	69	11	146	10	2.9	2.1	1.8
23	1.3	1.6	9.8	2.0	60	46	11	29	9.2	3.4	2.4	1.9
24	1.4	1.7	14	2.0	58	34	9.8	20	8.4	2.9	2.2	1.9
25	1.3	2.0	12	2.0	37	28	7.8	16	7.8	2.5	1.8	1.5
26	1.6	2.0	9.8	2.0	26	28	21	13	6.2	2.4	1.2	1.8
27	25	2.0	8.4	2.0	22	20	36	12	4.4	2.4	1.3	2.5
28	15	2.0	7.6	1.9	19	16	44	10	4.2	2.7	1.4	1.7
29	6.8	1.7	6.8	2.0	---	14	27	9.2	4.0	2.5	1.3	1.7
30	3.9	1.6	5.6	5.0	---	13	21	8.6	3.8	1.9	1.2	1.2
31	3.0	---	6.0	15	---	13	---	8.1	---	1.9	1.2	---
TOTAL	79.16	58.7	165.8	269.1	1318	1307	412.7	446.6	1864.0	94.3	68.6	41.8
MEAN	2.55	1.96	5.35	8.68	47.1	42.2	13.8	14.4	62.1	3.04	2.21	1.39
MAX	25	2.8	14	61	120	186	44	146	587	5.2	5.8	2.5
MIN	.53	1.6	2.5	1.9	15	11	7.8	4.4	3.8	1.9	1.2	1.0
CFSM	.17	.13	.36	.58	3.14	2.81	.92	.96	4.14	.20	.15	.09
IN.	.20	.15	.41	.67	3.27	3.24	1.02	1.11	4.62	.23	.17	.10

CAL YR 1981 TOTAL 2495.98 MEAN 6.84 MAX 93 MIN .20 CFSM .46 IN 6.19
WTR YR 1982 TOTAL 6125.76 MEAN 16.8 MAX 587 MIN .53 CFSM 1.12 IN 15.19

01615000 OPEQUON CREEK NEAR BERRYVILLE, VA

LOCATION.--Lat 39°10'40", long 78°04'20", Frederick County, Hydrologic Unit 02070004, on left bank between the bridges on State Highway 7, 0.2 mi (0.3 km) upstream from Abrams Creek, and 5.0 mi (8.0 km) west of Berryville.

DRAINAGE AREA.--57.4 mi^2 (148.7 km^2).

PERIOD OF RECORD.--October 1943 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 503.24 ft (153.388 m) National Geodetic Vertical Datum of 1929. Prior to July 26, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for January, which are fair. Diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 41.5 ft^3/s (1.175 m^3/s), 9.82 in/yr (249 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft^3/s (300 m^3/s) Nov. 13, 1970, gage height, 12.82 ft (3.908 m), from rating curve extended above 4,800 ft^3/s (140 m^3/s); minimum daily, 0.20 ft^3/s (0.006 m^3/s) Sept. 12, 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 18.4 ft (5.61 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft^3/s (24 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 3	1900	937	26.5	5.33	1.625
Mar. 17	0130	1340	37.9	6.30	1.920
June 13	1330	*2530	71.6	8.35	2.545

Minimum discharge, 2.9 ft^3/s (0.082 m^3/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	7.3	5.2	7.7	330	37	35	29	17	16	10	6.5
2	3.8	6.8	7.1	12	94	34	28	25	25	15	9.0	8.0
3	3.6	6.4	7.1	11	272	33	29	22	149	20	8.5	7.0
4	3.6	6.0	6.2	141	203	29	37	20	161	25	8.0	6.5
5	3.4	6.1	5.8	68	98	29	26	18	334	18	8.0	6.5
6	3.6	13	5.5	33	69	26	28	16	155	15	8.0	6.5
7	3.6	11	5.2	24	47	61	26	15	78	14	8.0	6.5
8	3.8	8.0	5.4	18	37	116	24	25	46	15	30	6.0
9	3.6	7.1	5.4	12	50	104	27	24	32	15	91	6.5
10	3.6	6.6	4.8	10	56	73	31	18	55	21	21	6.5
11	4.0	6.4	4.3	9.0	37	59	27	15	50	17	12	6.5
12	4.3	6.1	4.3	8.4	30	179	24	14	33	38	11	6.0
13	3.6	5.8	4.4	8.0	28	106	23	12	1320	15	9.5	6.5
14	3.1	5.7	4.9	7.6	27	69	22	12	299	13	9.0	6.5
15	4.3	5.6	7.4	7.3	30	54	21	12	106	13	8.5	7.0
16	3.8	5.4	10	7.0	50	272	20	11	114	16	8.0	9.0
17	3.4	5.2	10	6.6	240	638	21	10	354	12	8.0	8.0
18	3.8	5.2	9.1	6.4	172	150	32	10	207	10	8.0	7.0
19	4.8	5.1	9.2	6.4	129	100	24	10	88	13	7.0	7.5
20	4.5	5.6	8.6	6.6	359	244	21	10	58	12	7.0	8.0
21	4.0	5.9	7.2	6.8	378	281	20	9.5	42	33	7.0	8.0
22	4.3	5.5	7.2	6.8	191	149	19	9.5	35	12	7.0	9.0
23	4.8	5.2	14	6.6	122	95	17	11	29	22	7.0	10
24	5.5	5.4	26	6.6	92	72	16	11	26	15	7.5	9.5
25	5.5	5.7	15	6.6	69	59	16	10	23	10	7.0	9.0
26	7.4	5.6	13	6.6	50	55	67	10	22	10	6.5	9.5
27	71	5.6	9.0	6.6	45	45	80	9.5	21	9.5	6.5	15
28	77	5.3	8.3	6.4	40	38	88	11	20	9.5	7.0	9.0
29	19	4.9	7.0	6.6	---	35	48	12	19	10	6.5	6.0
30	11	4.7	7.0	7.0	---	33	35	9.5	18	10	6.0	5.5
31	8.5	---	7.0	53	---	33	---	9.0	---	12	6.5	---
TOTAL	293.8	188.2	250.6	529.6	3345	3308	932	440.0	3936	486.0	364.0	229.0
MEAN	9.48	6.27	8.08	17.1	119	107	31.1	14.2	131	15.7	11.7	7.63
MAX	77	13	26	141	378	638	88	29	1320	38	91	15
MIN	3.1	4.7	4.3	6.4	27	26	16	9.0	17	9.5	6.0	5.5
CFSM	.17	.11	.14	.30	2.07	1.86	.54	.25	2.28	.27	.20	.13
IN.	.19	.12	.16	.34	2.17	2.14	.60	.29	2.55	.31	.24	.15

CAL YR 1981 TOTAL 6572.1 MEAN 18.0 MAX 278 MIN 2.5 CFSM .31 IN 4.26
WTR YR 1982 TOTAL 14302.2 MEAN 39.2 MAX 1320 MIN 3.1 CFSM .68 IN 9.27

01616000 ABRAMS CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°10'40", long 78°05'10", Frederick County, Hydrologic Unit 02070004, on right bank 1,000 ft (305 m) upstream from bridge on State Highway 659, 0.9 mi (1.4 km) upstream from mouth, and 4.4 mi (7.1 km) east of Winchester.

DRAINAGE AREA.--16.5 mi² (42.7 km²).

PERIOD OF RECORD.--July 1949 to September 1960, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 526.46 ft (160.465 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 10 to Feb. 24, which are fair. Slight diurnal fluctuation caused by sewage disposal plant above station at Winchester. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by Virginia State Water Control Board.

AVERAGE DISCHARGE.--14 years, 19.4 ft³/s (0.549 m³/s), 15.97 in/yr (406 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 962 ft³/s (27.2 m³/s) Dec. 4, 1950, gage height, 6.16 ft (1.878 m), from rating curve extended above 410 ft³/s (11.6 m³/s); minimum, 3.5 ft³/s (0.099 m³/s) Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1930	224	6.34	2.83	0.863
Mar. 16	1830	226	6.40	2.84	.866
June 13	1100	*582	16.5	4.63	1.411
June 16	1900	256	7.25	3.00	.914
June 16	2300	427	12.1	3.90	1.189
July 16	1800	214	6.06	2.78	.847
Aug. 8	1900	258	7.31	3.01	.917
Aug. 9	0200	245	6.94	2.94	.896

Minimum discharge, 10 ft³/s (0.28 m³/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	17	20	50	26	24	20	22	30	22	19
2	14	16	16	17	40	26	24	20	20	28	22	22
3	12	16	14	17	100	26	32	20	42	42	22	20
4	12	16	14	51	66	26	26	20	26	31	22	18
5	12	17	14	26	50	26	24	19	60	26	24	17
6	14	22	13	20	40	24	26	19	28	26	22	18
7	13	17	13	20	35	36	24	18	24	26	20	18
8	13	15	14	18	32	34	24	22	22	30	51	19
9	14	16	14	17	31	32	26	19	20	26	61	19
10	14	16	14	16	33	30	24	18	38	26	26	19
11	14	16	14	16	30	28	22	18	26	26	24	18
12	15	15	14	15	28	48	22	18	24	26	22	17
13	16	14	13	15	28	32	22	19	250	24	22	18
14	16	14	14	14	27	28	22	19	83	26	20	19
15	16	14	17	14	27	28	22	18	46	26	20	26
16	16	14	19	14	35	88	22	18	107	48	20	19
17	16	14	18	13	50	89	26	18	126	28	20	17
18	16	14	17	13	40	43	24	18	70	24	20	16
19	14	14	15	13	37	36	20	18	49	26	20	15
20	14	16	15	14	50	65	20	17	42	26	20	17
21	14	13	15	15	70	65	20	17	36	26	22	16
22	14	12	17	14	50	43	20	17	34	24	20	20
23	17	12	20	14	42	36	19	18	32	26	22	17
24	15	13	19	14	36	32	19	17	32	24	20	17
25	14	13	17	14	32	30	19	17	34	22	20	16
26	22	12	17	14	28	28	39	17	32	22	19	20
27	88	12	17	14	26	26	32	17	31	26	19	22
28	28	12	17	14	26	24	28	19	30	26	19	16
29	20	12	17	14	---	24	24	17	30	24	18	16
30	17	12	16	14	---	24	22	17	31	26	18	16
31	16	---	16	15	---	24	---	17	---	24	19	---
TOTAL	550	434	487	519	1139	1127	718	566	1447	841	716	547
MEAN	17.7	14.5	15.7	16.7	40.7	36.4	23.9	18.3	48.2	27.1	23.1	18.2
MAX	88	22	20	51	100	89	39	22	250	48	61	26
MIN	12	12	13	13	26	24	19	17	20	22	18	15
CFSM	1.07	.88	.95	1.01	2.47	2.21	1.45	1.11	2.92	1.64	1.40	1.10
IN.	1.24	.98	1.10	1.17	2.57	2.54	1.62	1.28	3.26	1.90	1.61	1.23

CAL YR 1981 TOTAL 6817 MEAN 18.7 MAX 88 MIN 12 CFSM 1.13 IN 15.37
WTR YR 1982 TOTAL 9091 MEAN 24.9 MAX 250 MIN 12 CFSM 1.51 IN 20.49

01620500 NORTH RIVER NEAR STOKESVILLE, VA

LOCATION.--Lat 38°20'15", long 79°14'25", Augusta County, Hydrologic Unit 02070005, George Washington National Forest, on left bank 575 ft (175 m) upstream from highway bridge, 2.8 mi (4.5 km) upstream from city of Staunton dam, 3.8 mi (6.1 km) upstream from Broad Run, 5.0 mi (8.0 km) west of Stokesville, and 7.8 mi (12.6 km) upstream from Skidmore Fork.

DRAINAGE AREA.--17.2 mi² (44.5 km²).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1903: 1960. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,054.57 ft (626.233 m) National Geodetic Vertical Datum of 1929. Prior to June 10, 1958, at site 575 ft (175 m) downstream at datum 6.0 ft (1.83 m) lower.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--36 years, 25.7 ft³/s (0.728 m³/s), 20.29 in/yr (515 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s) June 17, 1949, gage height, 10.9 ft (3.32 m), from floodmarks, site and datum then in use, from rating curve extended above 900 ft³/s (25 m³/s) on basis of computation of peak flow over dam; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 15, 16, 19-22, 1962, Sept. 7-13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 8.4 ft (2.56 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2045	322	9.12	3.90	1.189	June 13	1245	453	12.8	4.17	1.271
Mar. 20	1515	*496	14.0	4.26	1.298						

Minimum discharge, 0.36 ft³/s (0.010 m³/s) Oct. 8, 9-15; minimum gage height, 1.93 ft (0.588 m) Sept. 19-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	5.0	2.2	13	79	38	21	34	6.2	5.1	12	2.0
2	.57	4.1	4.4	12	76	38	20	29	6.2	4.4	9.7	2.0
3	.53	3.2	7.6	12	203	38	22	26	6.2	3.7	7.8	2.0
4	.51	3.0	8.9	87	247	37	27	23	6.6	3.9	6.1	1.8
5	.46	2.5	9.2	107	136	37	29	20	12	5.2	5.7	1.7
6	.43	2.5	8.7	66	88	37	31	18	16	4.5	9.2	1.5
7	.40	2.3	8.1	49	60	49	29	17	15	3.6	24	1.4
8	.39	2.2	7.8	38	48	68	27	15	12	3.4	33	1.4
9	.37	2.0	7.3	32	67	68	27	13	11	3.9	26	1.4
10	.36	1.8	6.5	27	82	60	26	13	26	4.3	20	1.3
11	.36	1.7	6.2	25	69	54	25	12	34	5.3	16	1.2
12	.36	1.5	5.8	26	54	66	23	11	34	6.1	13	1.1
13	.36	1.4	5.2	27	46	72	22	9.7	273	4.8	11	1.1
14	.36	1.3	5.5	26	40	68	21	9.2	163	4.2	9.1	1.1
15	.38	1.3	6.1	26	35	61	19	8.1	75	17	7.8	1.0
16	.40	1.2	6.2	25	35	58	17	8.1	45	11	7.5	.95
17	.45	1.2	6.2	24	108	89	17	7.6	36	9.9	6.3	.95
18	.45	1.2	6.6	23	173	128	19	6.6	29	40	5.7	.92
19	.51	1.2	6.6	21	123	103	17	6.2	24	60	5.2	.86
20	.51	1.3	6.4	17	98	301	17	5.8	19	47	4.4	.86
21	.51	1.3	6.2	18	86	271	18	5.8	16	34	3.8	.86
22	.51	1.3	6.3	18	73	139	17	5.4	14	28	3.5	.97
23	.57	1.2	11	20	60	83	17	5.4	12	26	3.4	.95
24	.57	1.3	27	28	53	56	16	5.0	9.8	24	3.2	.95
25	.57	1.2	30	27	49	45	15	5.0	8.8	21	2.9	.95
26	1.1	1.2	27	25	46	38	27	8.1	7.6	17	2.7	1.2
27	26	1.2	23	23	44	33	39	8.1	6.6	14	2.6	1.8
28	24	1.3	19	24	41	29	46	6.6	6.0	13	2.5	2.1
29	13	1.7	16	23	---	26	45	5.8	5.8	11	2.3	2.0
30	10	1.8	14	21	---	24	39	6.6	5.6	9.7	2.2	1.8
31	6.6	---	13	26	---	23	---	6.2	---	13	2.0	---
TOTAL	92.12	55.4	324.0	936	2319	2237	735	360.3	941.4	458.0	270.6	40.12
MEAN	2.97	1.85	10.5	30.2	82.8	72.2	24.5	11.6	31.4	14.8	8.73	1.34
MAX	26	5.0	30	107	247	301	46	34	273	60	33	2.1
MIN	.36	1.2	2.2	12	35	23	15	5.0	5.6	3.4	2.0	.86
CFSM	.17	.11	.61	1.76	4.81	4.20	1.42	.67	1.83	.86	.51	.08
IN.	.20	.12	.70	2.02	5.02	4.84	1.59	.78	2.04	.99	.59	.09

CAL YR 1981 TOTAL 4187.77 MEAN 11.5 MAX 187 MIN .36 CFSM .67 IN 9.06
WTR YR 1982 TOTAL 8768.94 MEAN 24.0 MAX 301 MIN .36 CFSM 1.40 IN 18.96

01622000 NORTH RIVER NEAR BURKETOWN, VA

LOCATION.--Lat 38°20'25", long 78°54'50", Rockingham County, Hydrologic Unit 02070005, on right bank 0.8 mi (1.3 km) downstream from Pleasant Run, 2.8 mi (4.5 km) northeast of Burketown, and 8.5 mi (13.7 km) upstream from Middle River.

DRAINAGE AREA.--379 mi² (982 km²).

PERIOD OF RECORD.--October 1925 to October 1972, May 1975 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1171: 1936(M). WSP 1302: 1928-29(M), 1932-34(M), 1937-38(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.49 ft (336.344 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1938, nonrecording gage at site 3.0 mi (4.8 km) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 367 ft³/s (10.39 m³/s), 13.15 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s (1,770 m³/s) June 18, 1949, gage height, 36.3 ft (11.06 m), from floodmarks, from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurements at gage heights 32.4 ft (9.88 m) and 36.3 ft (11.06 m), and contracted-opening measurement at gage height 36.3 ft (11.06 m); minimum, 16 ft³/s (0.45 m³/s) Nov. 23, 1965, result of temporary dam upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, that of June 18, 1949.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 31	2300	3240	91.8	7.33	2.234	July 15	0400	4100	116	8.35	2.545
Feb. 3	1830	4140	117	8.40	2.560	July 23	1000	2620	74.2	6.55	1.996
Mar. 20	1500	5410	153	9.81	2.990	Aug. 6	1330	3960	112	8.20	2.499
June 13	1330	*7530	213	11.98	3.652						

Minimum discharge, 45 ft³/s (1.27 m³/s) Oct. 17, gage height, 1.83 ft (0.558 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	150	76	168	1200	535	465	616	660	207	347	142
2	58	136	85	162	770	525	414	525	525	194	295	142
3	54	127	83	159	2450	540	423	455	507	184	269	136
4	58	119	83	553	2780	510	414	393	544	194	252	124
5	58	117	83	1340	1900	485	386	358	715	204	238	122
6	54	117	78	1070	1420	465	386	328	770	178	1160	122
7	56	111	80	820	1080	726	374	302	627	168	788	124
8	54	106	83	620	825	1020	358	280	490	256	748	122
9	53	106	83	490	1100	990	355	266	405	433	666	114
10	51	101	83	397	1070	891	343	244	746	353	572	111
11	54	101	83	340	935	792	328	224	896	485	470	111
12	56	96	85	302	792	770	317	213	891	432	401	109
13	54	96	83	284	682	770	306	204	4910	328	347	106
14	53	94	92	259	572	770	291	190	3650	269	310	104
15	53	94	119	227	490	798	277	178	2090	1490	291	101
16	54	92	106	207	465	836	262	172	1460	525	295	99
17	49	90	101	181	1320	1070	262	165	1140	475	259	96
18	54	87	99	172	2350	1280	280	156	852	652	241	96
19	54	83	96	168	1960	1260	262	156	660	920	224	96
20	51	85	92	156	1750	3480	255	159	515	1270	210	101
21	53	83	92	172	1600	4270	255	150	428	974	204	96
22	54	78	94	172	1380	2740	244	194	366	698	194	96
23	58	78	106	168	1150	2010	238	629	328	1650	187	99
24	58	80	111	172	946	1540	227	704	295	1180	187	94
25	58	80	142	172	803	1200	227	803	269	737	181	90
26	66	78	162	170	693	1000	358	594	262	550	172	101
27	336	76	175	165	649	792	633	525	277	441	165	139
28	248	78	168	172	600	649	842	441	238	382	159	99
29	227	72	162	178	---	572	814	382	220	347	150	94
30	190	74	162	253	---	510	720	366	227	317	150	90
31	168	---	159	852	---	480	---	442	---	400	144	---
TOTAL	2600	2885	3306	10721	33732	34276	11316	10814	25963	16893	10276	3276
MEAN	83.9	96.2	107	346	1205	1106	377	349	865	545	331	109
MAX	336	150	175	1340	2780	4270	842	803	4910	1650	1160	142
MIN	49	72	76	156	465	465	227	150	220	168	144	90
CFSM	.22	.25	.28	.91	3.18	2.92	1.00	.92	2.28	1.44	.87	.29
IN.	.26	.28	.32	1.05	3.31	3.36	1.11	1.06	2.55	1.66	1.01	.32

CAL YR 1981 TOTAL 64293 MEAN 176 MAX 1930 MIN 49 CFSM .46 IN 6.31
WTR YR 1982 TOTAL 166058 MEAN 455 MAX 4910 MIN 49 CFSM 1.20 IN 16.30

POTOMAC RIVER BASIN

01624300 MIDDLE RIVER NEAR VERONA, VA

LOCATION.--Lat 38°14'36", long 79°02'08", Augusta County, Hydrologic Unit 02070005, on right bank at downstream side of bridge on State Highway 742, 2.7 mi (4.3 km) downstream from Moffett Creek, and 3.2 mi (5.1 km) northwest of Verona.

DRAINAGE AREA.--178 mi² (461 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,260.78 ft (384.286 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 180 ft³/s (5.098 m³/s), 13.73 in/yr (349 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,650 ft³/s (245 m³/s) Sept. 6, 1979, gage height, 14.17 ft (4.319 m), from rating curve extended above 6,500 ft³/s (180 m³/s); minimum, 3.7 ft³/s (0.10 m³/s) Jan. 30, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (40 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2130	2700	76.5	7.60	2.316
Feb. 17	2330	1980	56.1	6.46	1.969
Mar. 20	1500	3690	105	9.01	2.746
June 13	1230	*5820	165	11.49	3.502

Minimum discharge, 28 ft³/s (0.79 m³/s) Oct. 1, 8-11, 14, 15, 17, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	71	42	82	724	183	213	260	118	115	104	63
2	32	65	45	78	403	197	188	222	109	109	94	65
3	32	60	49	77	1330	230	201	201	111	104	86	59
4	31	56	49	411	1410	222	251	168	142	104	81	58
5	31	56	51	546	653	213	237	153	277	123	81	59
6	32	53	53	324	456	208	230	139	343	110	109	57
7	30	51	51	235	340	368	208	132	235	98	235	55
8	30	49	51	177	274	603	192	126	172	98	155	55
9	29	48	50	143	334	467	194	121	139	100	113	59
10	29	46	48	102	384	368	183	110	439	100	100	55
11	30	46	48	100	319	316	170	108	603	141	95	55
12	31	46	47	90	268	310	160	102	653	162	90	54
13	31	44	47	85	237	286	157	100	4060	113	82	52
14	28	45	50	78	208	268	146	95	1680	100	82	51
15	29	43	66	72	185	271	139	92	770	97	79	52
16	30	43	73	70	177	316	132	88	530	100	192	51
17	29	43	69	66	794	526	131	90	428	100	134	49
18	30	43	71	62	1010	512	179	85	346	88	108	50
19	31	42	65	60	700	411	160	84	289	126	96	50
20	30	42	63	57	500	1850	155	88	246	137	86	52
21	30	42	62	80	400	1350	155	85	210	97	84	54
22	29	41	64	90	350	818	144	92	190	87	79	56
23	31	38	89	95	320	582	137	160	170	118	74	53
24	32	42	194	105	275	463	128	105	155	149	74	50
25	33	40	200	102	250	384	124	172	144	100	70	52
26	35	40	164	95	228	355	197	387	144	90	68	57
27	201	40	139	86	215	298	537	283	132	85	67	77
28	309	39	118	87	203	262	621	203	124	82	68	62
29	176	41	104	94	---	237	425	160	118	77	65	55
30	109	38	91	136	---	225	319	144	121	95	64	52
31	84	---	83	388	---	213	---	137	---	114	63	---
TOTAL	1675	1393	2396	4273	12947	13312	6413	4492	13198	3319	2978	1669
MEAN	54.0	46.4	77.3	138	462	429	214	145	440	107	96.1	55.6
MAX	309	71	200	546	1410	1850	621	387	4060	162	235	77
MIN	28	38	42	57	177	183	124	84	109	77	63	49
CFSM	.30	.26	.43	.78	2.60	2.41	1.20	.82	2.47	.60	.54	.31
IN.	.35	.29	.50	.89	2.71	2.78	1.34	.94	2.76	.69	.62	.35

CAL YR 1981 TOTAL 23554 MEAN 64.5 MAX 669 MIN 27 CFSM .36 IN 4.92
WTR YR 1982 TOTAL 68065 MEAN 186 MAX 4060 MIN 28 CFSM 1.05 IN 14.22

01624800 CHRISTIANS CREEK NEAR FISHERSVILLE, VA

LOCATION.--Lat 38°07'42", long 78°59'41", Augusta County, Hydrologic Unit 02070005, on right bank at upstream side of bridge on State Highway 794, 2.2 mi (3.5 km) northwest of Fishersville, and 5.6 mi (9.0 km) upstream from mouth.

DRAINAGE AREA.--70.1 mi² (181.6 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 68.3 ft³/s (1.934 m³/s), 13.23 in/yr (336 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,850 ft³/s (109 m³/s) Oct. 5, 1972, gage height, 12.91 ft (3.935 m), from rating curve extended above 2,400 ft³/s (68 m³/s); minimum, 3.8 ft³/s (0.11 m³/s) Jan. 11, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1830	1170	33.1	5.92	1.804	Mar. 20	0930	*1830	51.8	7.79	2.374
Feb. 17	1730	1000	28.3	5.42	1.652	June 13	1100	1650	46.7	7.29	2.222

Minimum discharge, 7.7 ft³/s (0.22 m³/s) Dec. 10, 11, gage height, 0.86 ft (0.262 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	19	17	24	148	69	84	44	36	72	50	33
2	13	19	20	24	70	97	73	40	33	58	42	31
3	13	18	18	25	506	104	76	38	60	55	38	28
4	13	18	17	72	214	84	67	35	70	58	35	26
5	13	18	18	62	122	79	63	34	136	63	39	26
6	13	18	17	45	98	77	63	32	70	54	65	26
7	12	17	17	39	79	259	57	31	56	49	53	27
8	13	16	16	32	69	194	56	31	49	49	44	26
9	13	17	16	27	91	143	60	30	44	51	43	27
10	13	16	14	25	80	115	55	28	99	51	39	26
11	13	16	15	12	67	103	52	27	116	44	35	25
12	14	16	15	11	59	106	50	26	382	43	39	25
13	13	16	14	11	60	92	48	25	1320	41	33	24
14	13	16	17	10	55	83	46	25	414	41	34	24
15	13	16	31	10	52	98	44	24	236	43	114	25
16	13	16	29	10	62	126	43	23	177	43	91	24
17	13	16	24	10	355	132	47	23	184	39	60	23
18	13	16	22	11	225	104	55	22	145	48	78	21
19	14	15	18	11	198	95	42	23	125	63	41	21
20	13	16	16	11	164	726	41	29	109	43	36	24
21	14	16	17	13	129	321	40	25	99	41	32	24
22	13	15	21	22	106	181	37	99	92	37	30	27
23	14	15	53	25	92	144	36	152	86	47	28	24
24	15	16	52	26	84	124	34	57	80	42	28	22
25	14	16	38	26	76	114	33	47	75	35	28	22
26	18	16	31	23	69	128	68	42	71	32	25	45
27	115	17	28	24	70	101	154	42	69	31	25	59
28	56	16	25	28	70	91	82	39	66	31	28	27
29	28	15	23	38	---	86	55	39	68	30	31	24
30	23	15	21	67	---	82	48	49	71	84	31	22
31	20	---	21	219	---	82	---	41	---	90	32	---
TOTAL	591	492	701	993	3470	4340	1709	1222	4638	1508	1327	808
MEAN	19.1	16.4	22.6	32.0	124	140	57.0	39.4	155	48.6	42.8	26.9
MAX	115	19	53	219	506	726	154	152	1320	90	114	59
MIN	12	15	14	10	52	69	33	22	33	30	25	21
CFSM	.27	.23	.32	.46	1.77	2.00	.81	.56	2.21	.69	.61	.38
IN.	.31	.26	.37	.53	1.84	2.30	.91	.65	2.46	.80	.70	.43

CAL YR 1981 TOTAL 7692 MEAN 21.1 MAX 234 MIN 11 CFSM .30 IN 4.08
WTR YR 1982 TOTAL 21799 MEAN 59.7 MAX 1320 MIN 10 CFSM .85 IN 11.57

01625000 MIDDLE RIVER NEAR GROTTOES, VA

LOCATION.--Lat 38°15'42", long 78°51'44", Augusta County, Hydrologic Unit 02070005, on left bank at upstream side of bridge on State Highway 769 at Mount Meridian, 1.8 mi (2.9 km) upstream from mouth, and 2.0 mi (3.2 km) west of Grottoes.

DRAINAGE AREA.--375 mi^2 (971 km^2).

PERIOD OF RECORD.--April 1927 to current year. Records for February 1925 to September 1926, published in WSP 601 and 621, are unreliable and should not be used.

REVISED RECORDS.--WSP 1051: 1928-29, 1930(M), 1932, 1935-37, 1938(M), 1940. WSP 1171: 1933. WSP 1302: 1928-29(M), 1931-34(M). WSP 2103: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,061.51 ft (323.548 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--55 years, 307 ft^3/s (8.694 m^3/s), 11.12 in/yr (282 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft^3/s (694 m^3/s) Mar. 18, 1936, gage height, 28.57 ft (8.708 m), from floodmarks, from rating curve extended above 15,000 ft^3/s (420 m^3/s); minimum, 19 ft^3/s (0.54 m^3/s) Jan. 12, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, that of Mar. 18, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 4	0600	3230	91.5	10.33	3.149
Mar. 20	1900	5080	144	12.64	3.853
June 14	0530	*6930	196	14.51	4.423
Aug. 16	0930	3760	106	11.05	3.368

Minimum discharge, 52 ft^3/s (1.47 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	146	81	146	1170	374	409	380	209	250	272	132
2	61	130	98	149	634	398	365	334	192	224	197	132
3	62	123	100	143	1150	480	351	302	183	212	215	129
4	58	117	99	219	2420	433	382	277	322	213	169	118
5	60	111	101	770	1010	406	372	249	381	225	159	115
6	61	110	100	527	698	381	362	234	474	232	200	116
7	58	104	99	384	567	659	331	222	376	201	308	113
8	61	99	99	309	486	1040	310	217	295	194	389	111
9	58	97	97	253	541	771	311	209	247	248	246	111
10	60	96	95	220	614	608	307	198	281	221	210	114
11	62	94	88	200	531	517	290	187	692	212	183	111
12	64	93	90	170	478	509	275	181	661	308	179	108
13	65	92	91	150	444	463	266	174	3960	249	169	107
14	64	89	102	145	416	425	258	169	4510	203	157	105
15	65	88	137	140	370	422	247	163	1330	192	616	105
16	65	87	161	135	360	509	236	158	858	189	1270	106
17	66	86	150	130	752	691	235	154	737	185	703	103
18	66	87	138	128	1820	686	274	155	595	183	565	101
19	66	83	135	122	1130	585	274	150	499	190	287	100
20	69	85	130	140	1030	2700	252	160	438	263	229	104
21	70	85	128	170	785	2890	249	161	390	202	201	108
22	71	82	140	190	674	1410	242	158	352	174	184	115
23	74	82	158	210	585	969	228	374	330	202	171	119
24	80	82	248	205	524	771	219	248	303	282	164	108
25	78	88	291	200	482	646	211	231	286	214	160	101
26	83	86	261	190	435	631	301	283	270	175	149	114
27	219	83	222	185	406	537	708	414	268	163	145	238
28	531	83	198	205	399	478	862	318	251	157	148	161
29	344	82	176	250	---	443	598	263	241	153	141	125
30	230	78	160	396	---	415	454	245	271	193	133	114
31	170	---	142	596	---	400	---	234	---	346	133	---
TOTAL	3194	2848	4315	7377	20911	22647	10179	7202	20202	6655	8452	3544
MEAN	103	94.9	139	238	747	731	339	232	673	215	273	118
MAX	531	146	291	770	2420	2890	862	414	4510	346	1270	238
MIN	53	78	81	122	360	374	211	150	183	153	133	100
CFSM	.28	.25	.37	.64	1.99	1.95	.90	.62	1.80	.57	.73	.32
IN.	.32	.28	.43	.73	2.07	2.25	1.01	.71	2.00	.66	.84	.35

CAL YR 1981 TOTAL 40599 MEAN 111 MAX 535 MIN 49 CFSM .30 IN 4.03
WTR YR 1982 TOTAL 117526 MEAN 322 MAX 4510 MIN 53 CFSM .86 IN 11.66

01626000 SOUTH RIVER NEAR WAYNESBORO, VA

LOCATION.--Lat 38°03'27", long 78°54'30", Waynesboro City, Hydrologic Unit 02070005, on right bank 80 ft (20 m) downstream from bridge on State Highway 664, 1.3 mi (2.1 km) southwest of post office at Waynesboro, and 2.4 mi (3.9 km) downstream from Back Creek.

DRAINAGE AREA.--127 mi² (329 km²), of which 41 mi² (106 km²) are above flood-detention structures.

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,296.20 ft (395.082 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 22 to Feb. 26, which are fair. Flow from 41 mi² (106 km²) above station slightly regulated by flood-detention reservoirs (sixteen of which were built by Soil Conservation Service between 1954 and 1961). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--30 years, 136 ft³/s (3.852 m³/s), 14.54 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 ft³/s (493 m³/s) Aug. 20, 1969, gage height, 15.27 ft (4.654 m), from rating curve extended above 4,200 ft³/s (120 m³/s) on basis of contracted-opening measurement at gage height 13.95 ft (4.252 m); minimum, 7.0 ft³/s (0.20 m³/s) July 18, 1966; minimum daily, 17 ft³/s (0.48 m³/s) Aug. 8, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 14.3 ft (4.36 m), from floodmarks, discharge, 14,500 ft³/s (411 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) at 0200 hours June 14, gage height, 5.60 ft (1.707 m), no other peak above base of 1,000 ft³/s (28 m³/s); minimum, 27 ft³/s (0.76 m³/s) Oct. 10, gage height, 2.34 ft (0.713 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	57	36	93	290	154	164	164	100	125	72	45
2	30	53	39	108	220	164	151	149	87	91	59	44
3	30	50	39	111	350	189	166	137	85	85	55	42
4	30	47	38	174	520	174	184	125	100	85	51	41
5	30	45	39	250	400	169	164	115	164	102	50	41
6	30	45	38	206	290	161	164	108	159	89	55	41
7	30	42	37	176	220	199	151	102	132	78	82	41
8	31	41	37	151	190	253	141	100	115	74	66	39
9	30	39	36	132	175	237	144	95	102	76	70	39
10	28	38	34	102	160	222	137	89	166	74	61	39
11	31	38	35	85	140	209	127	85	258	72	55	39
12	29	38	35	78	128	211	120	80	248	68	76	39
13	29	37	34	72	120	196	115	78	939	64	64	39
14	29	37	37	68	115	184	113	76	930	62	59	39
15	29	37	50	64	108	186	106	72	566	64	93	38
16	29	37	55	60	112	206	102	68	407	64	68	38
17	29	37	51	58	190	227	104	68	319	61	62	38
18	29	36	51	58	570	211	117	66	261	64	68	38
19	30	36	45	59	460	206	104	66	217	100	59	38
20	29	36	44	60	440	290	100	82	186	72	55	39
21	29	36	44	64	400	363	97	76	164	70	51	39
22	29	37	50	70	340	339	93	78	146	61	48	42
23	31	36	82	70	270	287	89	154	134	57	48	41
24	33	36	117	73	230	256	87	97	122	57	48	38
25	34	36	106	74	180	232	85	89	115	55	48	38
26	38	36	93	72	171	243	125	80	108	51	47	48
27	181	35	85	70	171	217	202	80	104	50	47	74
28	176	36	76	70	166	194	245	100	97	50	47	50
29	97	35	70	75	---	181	211	108	100	48	45	42
30	74	34	64	80	---	171	184	108	97	68	44	41
31	64	---	64	108	---	166	---	100	---	80	45	---
TOTAL	1377	1183	1661	2991	7126	6697	4092	2995	6728	2217	1798	1250
MEAN	44.4	39.4	53.6	96.5	255	216	136	96.6	224	71.5	58.0	41.7
MAX	181	57	117	250	570	363	245	164	939	125	93	74
MIN	28	34	34	58	108	154	85	66	85	48	44	38
CFSM	.35	.31	.42	.76	2.01	1.70	1.07	.76	1.76	.56	.46	.33
IN.	.40	.35	.49	.88	2.09	1.96	1.20	.88	1.97	.65	.53	.37

CAL YR 1981 TOTAL 18251 MEAN 50.0 MAX 312 MIN 27 CFSM .39 IN 5.35
WTR YR 1982 TOTAL 40115 MEAN 110 MAX 939 MIN 28 CFSM .87 IN 11.75

01626850 SOUTH RIVER NEAR DOOMS, VA

LOCATION.--Lat 38°05'19", long 78°52'38", Augusta County, Hydrologic Unit 02070005, on left bank at downstream side of Hopeman Parkway Road bridge, 1.1 mi (1.8 km) downstream from Steele Run, and 1.6 mi (2.6 km) southwest of Dooms.

DRAINAGE AREA.--149 mi² (386 km²).

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,247.04 ft (380.098 m) National Geodetic Vertical Datum of 1929 (Norfolk and Western Railway bench mark). Prior to Sept. 18, 1980, nonrecording gage at site 30 ft (10 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 193 ft³/s (5.466 m³/s), 17.59 in/yr (447 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 8,000 ft³/s (227 m³/s) Mar. 19, 1975, gage height, 12.02 ft (3.664 m); minimum, 42 ft³/s (1.19 m³/s) Aug. 29, 30, 1981, gage height, 2.17 ft (0.661 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1930	1110	31.4	5.13	1.564
Mar. 20	0930	1170	33.1	5.28	1.609
June 13	1130	*1780	50.4	6.65	2.027

Minimum discharge, 45 ft³/s (1.27 m³/s) Oct. 22, gage height, 2.19 ft (0.668 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	85	61	130	448	198	207	220	121	162	101	61
2	50	80	63	143	326	207	191	201	109	130	87	61
3	50	75	63	146	598	239	204	185	182	112	80	59
4	50	72	63	217	777	220	233	169	169	114	75	57
5	51	68	63	332	483	217	204	156	262	132	72	57
6	51	68	59	271	367	204	201	146	217	118	75	57
7	50	68	61	226	294	271	188	143	172	104	109	57
8	50	66	59	191	252	338	178	137	146	96	90	55
9	53	66	59	169	242	313	178	130	134	98	92	57
10	49	63	55	127	223	290	175	124	230	96	86	57
11	53	61	55	110	194	271	162	118	319	98	74	55
12	51	61	57	105	178	274	153	112	370	94	95	55
13	50	61	55	95	172	255	146	109	1610	88	85	55
14	48	59	68	88	162	236	143	104	1410	85	80	55
15	49	59	77	80	156	242	134	104	769	87	121	55
16	50	61	82	76	159	271	134	98	515	87	101	52
17	50	59	75	73	483	303	140	95	396	82	90	52
18	51	59	75	72	735	281	153	92	329	95	98	52
19	53	59	70	71	550	271	137	95	271	124	80	52
20	52	59	68	74	539	634	130	109	230	95	75	55
21	53	59	68	82	452	566	130	104	201	95	70	55
22	52	57	75	88	374	480	124	115	182	85	68	63
23	58	61	101	92	319	399	118	191	169	82	68	57
24	57	59	150	92	287	348	118	130	156	80	66	55
25	60	57	140	91	252	313	115	115	146	77	66	52
26	82	57	124	91	223	319	169	107	137	75	63	130
27	316	57	115	89	217	284	271	107	130	72	63	104
28	252	57	107	92	214	249	326	124	128	70	63	70
29	137	55	98	98	---	233	278	140	130	70	61	61
30	107	55	90	107	---	217	239	134	132	143	61	61
31	92	---	87	150	---	210	---	124	---	124	61	---
TOTAL	2278	1883	2443	3868	9676	9153	5279	4038	9472	3070	2476	1824
MEAN	73.5	62.8	78.8	125	346	295	176	130	316	99.0	79.9	60.8
MAX	316	85	150	332	777	634	326	220	1610	162	121	130
MIN	48	55	55	71	156	198	115	92	109	70	61	52
CFSM	.49	.42	.53	.84	2.32	1.98	1.18	.87	2.12	.66	.54	.41
IN.	.57	.47	.61	.97	2.42	2.29	1.32	1.01	2.36	.77	.62	.46

CAL YR 1981 TOTAL 29392 MEAN 80.5 MAX 474 MIN 44 CFSM .54 IN 7.34
WTR YR 1982 TOTAL 55460 MEAN 152 MAX 1610 MIN 48 CFSM 1.02 IN 13.85

01627500 SOUTH RIVER AT HARRISTON, VA

LOCATION.--Lat 38°13'07", long 78°50'13", Augusta County, Hydrologic Unit 02070005, on left bank 100 ft (30 m) downstream from bridge on State Highway 778, 0.3 mi (0.5 km) northwest of Harriston, 0.6 mi (1.0 km) downstream from Paine Run, and 7.2 mi (11.6 km) upstream from confluence with North River.

DRAINAGE AREA.--212 mi^2 (549 km^2).

PERIOD OF RECORD.--February 1925 to September 1951, October 1968 to current year.

REVISED RECORDS.--WSP 1171: 1926(M), 1927-28, 1929-32(M), 1933, 1934(M), 1935, 1937. WSP 1302: 1937(M), 1938(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,129.87 ft (344.384 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 250 ft^3/s (7.080 m^3/s), 16.01 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft^3/s (654 m^3/s) Oct. 15, 1942, gage height, 17.2 ft (5.24 m), from rating curve extended above 10,000 ft^3/s (280 m^3/s); minimum, 17 ft^3/s (0.48 m^3/s) Nov. 14, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1870 and 1877 reached a stage of about 18.8 ft (5.73 m), from information by observer in 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft^3/s (34 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)	Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)
Feb. 3	1700	1340	37.9	5.36	1.634	Mar. 20	1430	1770	50.1	5.97	1.820
Feb. 17	2200	1280	36.2	5.27	1.606	June 13	1600	*2480	70.2	6.90	2.103

Minimum discharge, 59 ft^3/s (1.67 m^3/s) Oct. 14, 15, 17-23, gage height, 2.33 ft (0.710 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	108	68	141	555	258	282	279	152	169	123	77
2	65	99	74	170	398	262	255	250	147	145	106	75
3	62	93	73	176	937	305	249	229	139	134	103	73
4	63	89	70	214	992	291	287	207	265	134	91	69
5	63	85	73	401	657	279	260	192	343	137	87	68
6	64	82	70	355	495	267	252	180	307	145	90	68
7	63	80	68	297	386	334	239	172	247	123	125	68
8	63	78	68	248	323	464	224	168	215	117	114	68
9	63	77	67	217	316	437	221	160	192	120	103	67
10	61	75	66	178	287	401	218	152	256	118	107	67
11	63	74	64	145	249	373	203	145	419	129	98	67
12	62	73	65	130	226	373	192	141	424	119	110	66
13	61	72	65	110	220	347	182	133	2040	107	110	66
14	60	71	69	105	206	321	179	129	1840	103	99	65
15	60	70	93	98	195	320	169	127	1080	102	132	66
16	60	70	97	95	198	357	161	121	715	102	134	65
17	60	70	91	92	581	404	162	117	538	99	107	65
18	59	69	87	90	1070	389	180	115	430	98	133	64
19	60	68	84	90	833	372	168	115	348	137	107	64
20	60	69	78	95	822	1010	157	129	290	115	95	67
21	60	68	79	108	680	1110	155	131	250	107	91	66
22	60	67	84	120	550	850	148	133	223	101	86	77
23	62	70	98	122	455	649	143	204	206	94	86	71
24	66	70	162	125	396	531	140	168	189	92	85	68
25	64	69	168	120	345	453	137	150	178	89	82	65
26	76	68	154	115	296	457	181	137	171	85	80	94
27	283	66	142	110	283	396	302	131	160	82	79	177
28	390	65	132	112	281	341	438	147	153	80	79	98
29	188	66	122	120	---	312	375	160	153	78	77	79
30	138	65	112	142	---	290	317	175	151	139	76	76
31	120	---	108	211	---	281	---	160	---	156	77	---
TOTAL	2743	2246	2851	4852	13232	13234	6576	4957	12221	3556	3072	2226
MEAN	88.5	74.9	92.0	157	473	427	219	160	407	115	99.1	74.2
MAX	390	108	168	401	1070	1110	438	279	2040	169	134	177
MIN	59	65	64	90	195	258	137	115	139	78	76	64
CFSM	.42	.35	.43	.74	2.23	2.01	1.03	.76	1.92	.54	.47	.35
IN.	.48	.39	.50	.85	2.32	2.32	1.15	.87	2.14	.62	.54	.39

CAL YR 1981 TOTAL 36487 MEAN 100 MAX 462 MIN 55 CFSM .47 IN 6.40
WTR YR 1982 TOTAL 71766 MEAN 197 MAX 2040 MIN 59 CFSM .93 IN 12.59

01628060 WHITE OAK RUN NEAR GROTTOES, VA

LOCATION.--Lat 38°15'01", long 78°44'57", Rockingham County, Hydrologic Unit 02070005, Shenandoah National Park, on left bank 700 ft (213 m) upstream from Madison Run, 0.2 mi (0.3 km) south of Madison Run Forest Trail, 1.4 mi (2.3 km) upstream from southwest boundary of Shenandoah National Park, and 4.3 mi (6.9 km) southeast of Grottoes.

DRAINAGE AREA.--1.94 mi² (5.02 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from topographic map.

REMARKS.--Records good except those below 1.0 ft³/s (0.028 m³/s), which are fair. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 255 ft³/s (7.22 m³/s) June 13, 1982, gage height, 2.85 ft (0.869 m); no flow many days in 1980-82.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft³/s (0.85 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 17	2315	30	0.85	1.97	0.600
Mar. 21	0430	51	1.44	2.15	.655
June 13	1330	*255	7.22	2.85	0.869

No flow many days during October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.07	.04	.89	1.5	2.9	2.5	5.0	.34	.20	6.5	.13
2	.00	.06	.04	1.2	1.7	3.2	2.2	4.0	.28	.12	3.8	.12
3	.00	.05	.05	1.3	9.1	3.4	2.3	3.2	.26	.10	2.6	.11
4	.00	.04	.04	2.6	15	3.2	2.4	2.7	.29	.10	1.7	.09
5	.00	.03	.06	4.4	9.6	3.2	2.1	2.1	1.0	.11	1.6	.09
6	.00	.05	.06	3.8	6.8	2.8	2.1	1.7	1.4	.10	3.3	.08
7	.00	.09	.06	2.9	5.0	3.7	1.7	1.5	1.5	.08	11	.07
8	.00	.09	.06	2.3	3.8	5.0	1.5	1.3	1.2	.67	12	.06
9	.00	.09	.08	2.0	4.0	6.2	1.5	1.1	.94	.70	7.5	.06
10	.00	.08	.07	1.7	3.7	5.8	1.3	.93	1.2	.23	4.5	.06
11	.00	.08	.08	1.4	3.2	5.2	1.1	.82	1.5	.10	3.2	.06
12	.00	.06	.06	1.1	2.9	5.0	1.0	.73	4.1	.23	2.4	.06
13	.00	.06	.06	.99	2.9	5.0	.94	.63	142	1.0	1.8	.05
14	.00	.05	.06	.97	2.4	5.2	.81	.56	32	.67	1.4	.05
15	.00	.05	.10	.92	2.0	5.4	.71	.50	8.4	.42	1.2	.05
16	.00	.04	.13	.78	2.0	5.8	.65	.45	4.1	.22	1.0	.05
17	.00	.04	.16	.70	13	6.8	.71	.40	2.6	.13	1.0	.04
18	.00	.03	.18	.60	20	8.0	.90	.36	1.8	7.4	1.4	.04
19	.00	.03	.17	.52	13	8.0	.83	.33	1.3	6.7	.91	.03
20	.00	.04	.14	.48	11	19	.83	.30	.92	2.7	.73	.05
21	.00	.08	.12	.58	10	38	.83	.27	.63	1.5	.62	.06
22	.00	.08	.12	.56	8.9	18	.83	.25	.47	.90	.51	.11
23	.00	.08	.52	.51	7.4	11	.83	.27	.38	.74	.39	.13
24	.00	.06	1.3	.76	6.2	6.8	.77	.22	.29	.69	.32	.10
25	.00	.06	1.6	.77	4.6	5.4	.77	.19	.24	.42	.28	.08
26	.01	.06	1.5	.74	3.8	4.5	1.5	.18	.19	.29	.23	.10
27	1.1	.06	1.3	.65	3.7	3.6	6.2	.17	.17	.19	.19	.36
28	.64	.05	1.1	.56	3.3	3.2	12	.23	.15	.16	.18	.09
29	.25	.06	.90	.55	---	2.8	9.3	.20	.14	.15	.15	.04
30	.14	.04	.74	.50	---	2.6	6.4	.29	.22	.53	.13	.02
31	.10	---	.63	.63	---	2.6	---	.28	---	6.3	.13	---
TOTAL	2.24	1.76	11.53	38.36	180.5	210.3	67.51	31.16	210.01	33.85	72.67	2.44
MEAN	.072	.059	.37	1.24	6.45	6.78	2.25	1.01	7.00	1.09	2.34	.081
MAX	1.1	.09	1.6	4.4	20	38	12	5.0	142	7.4	12	.36
MIN	.00	.03	.04	.48	1.5	2.6	.65	.17	.14	.08	.13	.02
CFSM	.04	.03	.19	.64	3.33	3.50	1.16	.52	3.61	.56	1.21	.04
IN.	.04	.03	.22	.74	3.46	4.03	1.29	.60	4.02	.65	1.39	.05

CAL YR 1981 TOTAL 237.13 MEAN .65 MAX 13 MIN .00 CFSM .34 IN 4.54
WTR YR 1982 TOTAL 862.33 MEAN 2.36 MAX 142 MIN .00 CFSM 1.22 IN 16.53

01628150 DEEP RUN NEAR GROTTOES, VA

LOCATION.--Lat 38°16'23", long 78°45'36", Rockingham County, Hydrologic Unit 02070005, Shenandoah National Park, on right bank, 0.2 mi (0.3 km) southeast of boundary of Shenandoah National Park, 0.5 mi (0.8 km) upstream from culvert on State Highway 708, and 3.7 mi (6.0 km) east of Grottoes.

DRAINAGE AREA.--1.17 mi^2 (3.03 km^2).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from topographic map.

REMARKS.--Records good except those below 0.10 ft^3/s (0.003 m^3/s), which are poor. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48 ft^3/s (1.36 m^3/s) Mar. 21, 1982, gage height, 2.15 ft (0.655 m); minimum daily, 0.02 ft^3/s (0.001 m^3/s) Sept. 14-16, 1980, Aug. 29, Sept. 28-30, Oct. 1, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s (0.57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 21	0715	*48	1.36	2.15	0.655	June 13	1515	36	1.02	2.01	0.613

Minimum daily discharge, 0.02 ft^3/s (0.001 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.07	.04	.21	.83	1.7	1.7	2.8	.88	.51	1.1	.18
2	.04	.06	.04	.26	.88	1.8	1.5	2.3	.51	.34	.82	.18
3	.03	.06	.05	.31	3.1	1.9	1.5	2.1	.44	.31	.68	.16
4	.03	.05	.05	1.2	4.6	1.7	1.4	1.8	.60	.31	.57	.14
5	.03	.05	.05	2.1	2.8	1.7	1.3	1.6	2.2	.37	.50	.14
6	.03	.06	.06	1.3	2.2	1.7	1.3	1.4	2.1	.29	.75	.12
7	.03	.06	.06	.94	1.7	2.2	1.1	1.4	1.5	.25	1.0	.12
8	.03	.05	.06	.68	1.5	2.8	1.0	1.2	1.2	.50	1.4	.11
9	.03	.05	.07	.60	1.7	2.8	1.0	1.1	.88	.59	1.3	.11
10	.03	.05	.08	.51	1.8	2.5	.99	.99	.99	.37	1.2	.11
11	.03	.05	.07	.46	1.7	2.4	.88	.88	1.1	.34	.98	.10
12	.03	.04	.07	.41	1.6	2.4	.88	.78	2.5	.37	.84	.09
13	.03	.04	.06	.37	1.5	2.5	.83	.73	24	2.1	.72	.09
14	.03	.04	.07	.33	1.3	2.4	.83	.68	12	1.2	.66	.09
15	.03	.04	.08	.30	1.1	2.4	.73	.60	5.1	.89	.62	.08
16	.03	.04	.09	.27	1.1	2.4	.68	.55	3.2	.71	.55	.08
17	.03	.04	.11	.25	3.6	2.8	.78	.51	2.4	.56	.57	.07
18	.03	.04	.11	.23	6.0	2.8	.99	.48	1.9	4.6	.68	.07
19	.04	.04	.11	.21	4.6	2.7	.94	.44	1.6	5.4	.45	.07
20	.04	.05	.11	.20	4.6	8.8	.94	.44	1.3	2.8	.39	.09
21	.04	.05	.11	.23	4.4	28	.94	.41	1.0	1.9	.36	.08
22	.04	.04	.12	.21	4.1	10	.88	.44	.88	1.4	.33	.11
23	.07	.04	.41	.21	3.4	5.2	.83	.48	.73	1.3	.30	.09
24	.07	.05	.83	.28	2.8	3.6	.83	.37	.64	1.1	.28	.09
25	.07	.05	.51	.37	2.4	3.0	.83	.37	.55	.81	.27	.09
26	.16	.05	.37	.41	2.1	2.7	1.7	.34	.51	.66	.23	.32
27	.78	.05	.31	.37	2.0	2.2	8.8	.31	.48	.57	.23	.64
28	.44	.04	.26	.34	1.8	2.1	8.3	.34	.44	.51	.23	.21
29	.16	.04	.21	.31	---	1.9	4.7	.34	.41	.49	.21	.12
30	.09	.04	.18	.28	---	1.7	3.4	.48	.64	.61	.18	.10
31	.08	---	.16	.37	---	1.7	---	.51	---	1.2	.18	---
TOTAL	2.62	1.43	4.91	14.52	71.21	114.5	52.48	27.17	72.68	33.36	18.58	4.05
MEAN	.085	.048	.16	.47	2.54	3.69	1.75	.88	2.42	1.08	.60	.14
MAX	.78	.07	.83	2.1	6.0	28	8.8	2.8	24	5.4	1.4	.64
MIN	.02	.04	.04	.20	.83	1.7	.68	.31	.41	.25	.18	.07
CFSM	.07	.04	.14	.40	2.17	3.15	1.50	.75	2.07	.92	.51	.12
IN.	.08	.05	.16	.46	2.26	3.64	1.67	.86	2.31	1.06	.59	.13

CAL YR 1981 TOTAL 131.39 MEAN .36 MAX 5.3 MIN .02 CFSM .31 IN 4.17
WTR YR 1982 TOTAL 417.51 MEAN 1.14 MAX 28 MIN .02 CFSM .97 IN 13.26

01628500 SOUTH FORK SHENANDOAH RIVER NEAR LYNNWOOD, VA

LOCATION.--Lat 38°19'21", long 78°45'18", Rockingham County, Hydrologic Unit 02070005, on left bank 1.2 mi (1.9 km) northeast of Lynnwood and 3.3 mi (5.3 km) downstream from confluence of North and South Rivers.

DRAINAGE AREA.--1,084 mi² (2,808 km²).

PERIOD OF RECORD.--September 1930 to current year.

REVISED RECORDS.--WSP 1171: 1933(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,013.17 ft (308.814 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow prior to 1960 caused by mill at Lynnwood. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--52 years, 989 ft³/s (28.01 m³/s), 12.39 in/yr (315 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s (2,270 m³/s) Oct. 15, 1942, gage height, 27.2 ft (8.29 m), from rating curve extended above 22,000 ft³/s (620 m³/s) on basis of computations of flow over dam at gage heights 23.60 ft (7.193 m) and 27.2 ft (8.29 m); minimum, 32 ft³/s (0.91 m³/s) Sept. 20, 1932, gage height, 1.63 ft (0.497 m); minimum daily, 93 ft³/s (2.63 m³/s) Sept. 21, 29, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s (200 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	0400	8120	230	9.95	3.033
Mar. 20	2030	11700	331	12.12	3.694
June 13	1830	*14500	411	13.52	4.121

Minimum discharge, 175 ft³/s (4.96 m³/s) Oct. 7, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	381	255	406	3220	1250	1330	1440	1180	730	901	416
2	186	355	275	438	2070	1260	1200	1260	968	656	680	413
3	186	336	280	438	3700	1440	1140	1120	838	613	653	404
4	181	323	274	675	6830	1350	1240	1000	1310	605	579	383
5	182	317	278	2460	3910	1270	1160	907	1470	710	540	374
6	185	312	276	2160	2860	1200	1130	832	1700	651	1290	373
7	180	302	270	1660	2190	1790	1080	774	1400	581	1400	369
8	178	297	276	1310	1730	2890	1030	731	1130	554	1510	370
9	176	296	272	1060	1970	2490	1020	698	952	1070	1140	361
10	180	292	269	818	2140	2130	1000	653	1190	1070	1000	359
11	181	287	264	700	1820	1870	947	614	2330	848	856	357
12	185	287	265	650	1560	1830	898	592	2090	1040	774	353
13	186	284	267	600	1390	1740	856	565	10200	843	702	346
14	184	280	273	530	1250	1670	831	544	10800	672	629	342
15	182	277	334	480	1110	1670	783	517	4970	1730	1180	340
16	185	275	358	450	1060	1840	745	500	3410	1050	1890	337
17	184	272	345	420	2120	2350	735	490	2760	845	1330	333
18	183	272	328	410	5500	2520	821	482	2190	1000	1120	328
19	184	266	313	430	4240	2450	803	472	1750	1210	719	327
20	186	266	317	450	3970	6570	737	489	1460	1830	610	335
21	184	264	347	480	3360	9460	724	493	1250	1470	558	339
22	185	260	329	500	2870	5640	702	505	1110	1120	528	348
23	197	256	341	520	2370	3990	668	1050	1020	1690	504	356
24	205	263	428	525	2020	3190	650	1210	925	2010	496	342
25	207	264	527	500	1730	2610	633	1260	851	1210	484	328
26	221	263	523	470	1500	2380	837	1100	795	948	465	348
27	508	256	492	460	1400	1960	1760	1200	829	792	451	591
28	1220	255	462	470	1360	1670	2480	1020	735	698	450	446
29	732	254	433	520	---	1500	2040	918	694	651	435	372
30	533	248	409	655	---	1380	1680	905	740	671	422	349
31	429	---	391	1250	---	1310	---	884	---	979	419	---
TOTAL	8275	8560	10471	22895	71250	76670	31660	25225	63047	30547	24715	11039
MEAN	267	285	338	739	2545	2473	1055	814	2102	985	797	368
MAX	1220	381	527	2460	6830	9460	2480	1440	10800	2010	1890	591
MIN	176	248	255	406	1060	1200	633	472	694	554	419	327
CFSM	.25	.26	.31	.68	2.35	2.28	.97	.75	1.94	.91	.74	.34
IN.	.28	.29	.36	.79	2.45	2.63	1.09	.87	2.16	1.05	.85	.38

CAL YR 1981 TOTAL 148995 MEAN 408 MAX 3180 MIN 175 CFSM .38 IN 5.11
WTR YR 1982 TOTAL 384354 MEAN 1053 MAX 10800 MIN 176 CFSM .97 IN 13.19

01629500 SOUTH FORK SHENANDOAH RIVER NEAR LURAY, VA

LOCATION.--Lat 38°38'46", long 78°32'06", Page County, Hydrologic Unit 02070005, on right bank between bridges on U.S. Highway 211, 1.2 mi (1.9 km) downstream from Big Run, 2.2 mi (3.5 km) upstream from Mill Creek, and 4.1 mi (6.6 km) west of Luray.

DRAINAGE AREA.--1,377 mi² (3,566 km²).

PERIOD OF RECORD.--April 1925 to September 1930, October 1938 to September 1951, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 721.76 ft (219.992 m) National Geodetic Vertical Datum of 1929. April 1925 to September 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for January, which are fair. Diurnal fluctuation at low and medium flow caused by powerplant 10 mi (16 km) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 1,270 ft³/s (35.97 m³/s), 12.52 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s (2,830 m³/s) Oct. 16, 1942, gage height, 25.7 ft (7.833 m); minimum, 70 ft³/s (1.98 m³/s) Sept. 27, 1941, gage height, 2.15 ft (0.655 m); minimum daily, 135 ft³/s (3.82 m³/s) Sept. 16, 1925, Sept. 28, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 23.6 ft (7.19 m), from floodmarks, discharge, 81,600 ft³/s (2,310 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (230 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	1400	9920	281	8.58	2.615
Feb. 18	----	a8000	230	Unknown	
Mar. 21	0500	15700	445	10.82	3.298
June 14	0330	*19600	555	12.18	3.712

a About.

Minimum discharge, 208 ft³/s (5.89 m³/s) Dec. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	285	671	355	590	2950	1620	1640	1880	1380	964	1170	518
2	291	597	355	678	2700	1570	1550	1660	1360	924	989	511
3	279	547	367	702	2510	1650	1430	1480	1230	852	788	498
4	279	504	392	820	8680	1710	1450	1360	1340	828	796	477
5	279	504	385	1690	5760	1590	1440	1240	1850	844	702	457
6	279	470	385	2660	3770	1490	1380	1160	2310	900	717	450
7	274	477	385	2050	2800	1600	1330	1070	2050	820	1830	450
8	268	457	379	1690	2170	3100	1280	1040	1670	756	1640	444
9	252	444	379	1390	1990	3160	1250	998	1380	868	1530	450
10	262	430	379	1140	2680	2660	1250	948	1320	1500	1270	430
11	252	437	373	820	2250	2280	1200	892	2170	1040	1110	418
12	257	418	367	780	1950	2210	1150	852	2530	1130	980	418
13	262	385	367	740	1750	2200	1120	820	8280	1200	876	418
14	262	398	367	720	1590	2070	1100	780	17500	956	844	404
15	252	392	373	720	1460	1980	1050	748	8610	1200	833	398
16	252	392	520	720	1370	2100	1020	725	5050	1690	1650	398
17	257	385	518	680	1730	2510	972	702	3790	1120	2000	392
18	252	379	518	680	6500	2840	1010	678	3050	1010	1360	385
19	257	379	477	680	6000	2890	1070	663	2380	1180	1090	379
20	257	373	450	660	5680	5720	1020	656	1970	1620	820	379
21	246	367	411	740	4840	14400	980	694	1710	1930	740	385
22	246	367	444	740	4140	8970	948	686	1500	1460	686	418
23	252	361	486	720	3280	5720	924	748	1370	1280	605	424
24	268	361	547	720	2710	4330	900	1430	1280	2650	619	424
25	268	367	678	760	2300	3430	876	1320	1160	1720	605	411
26	291	367	772	720	1980	3020	972	1380	1100	1280	590	398
27	498	367	764	680	1790	2550	1640	1270	1050	1050	568	518
28	1530	361	732	680	1730	2100	3460	1350	1070	908	561	748
29	1370	355	686	720	---	1870	2880	1300	980	844	554	532
30	945	355	641	900	---	1740	2240	1340	940	812	532	470
31	788	---	590	1300	---	1640	---	1290	---	908	525	---
TOTAL	12010	12667	14842	29290	89060	96720	40532	33160	83380	36244	29580	13402
MEAN	387	422	479	945	3181	3120	1351	1070	2779	1169	954	447
MAX	1530	671	772	2660	8680	14400	3460	1880	17500	2650	2000	748
MIN	246	355	355	590	1370	1490	876	656	940	756	525	379
CFSM	.28	.31	.35	.69	2.31	2.27	.98	.78	2.02	.85	.69	.33
IN.	.32	.34	.40	.79	2.41	2.61	1.09	.90	2.25	.98	.80	.36

CAL YR 1981 TOTAL 215136 MEAN 589 MAX 4040 MIN 190 CFSM .43 IN 5.81
WTR YR 1982 TOTAL 490887 MEAN 1345 MAX 17500 MIN 246 CFSM .98 IN 13.26

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA

LOCATION.--Lat 38°54'50", long 78°12'40", Warren County, Hydrologic Unit 02070005, on left bank 0.7 mi (1.1 km) downstream from bridge on State Highway 619, 1.0 mi (1.6 km) west of Front Royal, and 3.5 mi (5.6 km) upstream from confluence with North Fork.

DRAINAGE AREA.--1,642 mi² (4,253 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1899 to September 1906, September 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1171: 1935(M), 1937(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 469.38 ft (143.067 m) National Geodetic Vertical Datum of 1929. June 1899 to July 1906, nonrecording gage at site 1.0 mi (1.6 km) upstream at different datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow caused by powerplants above station prior to 1954; occasional large diurnal fluctuation thereafter. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--59 years, 1,585 ft³/s (44.89 m³/s), 13.11 in/yr (333 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) Oct. 16, 1942, gage height, 34.8 ft (10.61 m), from floodmark in gage well, from rating curve extended above 92,000 ft³/s (2,600 m³/s) on basis of slope-area measurement of peak flow; minimum, 59 ft³/s (1.67 m³/s) Jan. 30, 1934, gage height, 0.56 ft (0.171 m); minimum daily, 103 ft³/s (2.92 m³/s) Sept. 30, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,500 ft³/s (240 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	----	Unknown		Unknown	
Mar. 21	1630	15400	436	9.25	2.819
June 14	1415	*18900	535	10.38	3.164

Minimum discharge, 244 ft³/s (6.91 m³/s) Oct. 17, gage height, 0.94 ft (0.287 m); minimum daily, 263 ft³/s (7.45 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	780	356	616	3000	2050	1980	2470	1580	910	927	526
2	295	662	371	616	2900	1940	1910	2110	1910	935	1160	542
3	301	589	363	710	2800	1910	1770	1840	1670	902	1020	523
4	308	563	378	863	6000	2040	1650	1610	1820	862	786	505
5	263	486	385	1090	7000	1940	1650	1450	2280	810	785	465
6	295	537	385	2510	4800	1800	1660	1290	2890	826	808	460
7	295	462	378	2740	3580	2360	1530	1210	2850	854	853	448
8	282	462	393	2170	2870	3940	1500	1100	2370	820	1850	446
9	288	446	378	1760	2590	3470	1430	1110	1920	726	1850	456
10	269	431	371	1370	2550	3000	1400	1020	1690	858	1520	457
11	269	423	363	800	2900	2500	1370	942	1670	1470	1260	436
12	269	415	356	650	2480	2550	1310	897	2790	988	1120	430
13	275	400	356	730	2110	2450	1250	832	3840	1160	977	426
14	275	378	363	800	1870	2350	1210	804	15900	1130	900	423
15	282	385	423	790	1730	2150	1140	768	12200	916	797	443
16	288	385	454	710	1640	2100	1070	723	6220	1420	922	409
17	269	385	520	640	1660	2700	1050	708	4520	1500	1860	412
18	275	385	563	610	2880	3000	1020	673	3910	1060	1690	410
19	275	378	431	640	6750	3460	1040	673	3020	1020	1300	394
20	282	378	520	730	6300	3980	1100	645	2460	1170	1050	404
21	282	378	462	940	5930	12100	1010	676	2070	1740	849	400
22	295	356	563	860	5190	11400	957	709	1780	1780	683	425
23	308	349	520	800	4500	7120	968	720	1530	1440	683	454
24	321	371	571	850	3800	5310	858	780	1400	1570	618	445
25	308	363	589	800	3170	4320	880	1630	1270	2390	627	433
26	335	356	710	730	2700	3690	989	1350	1180	1590	604	457
27	589	356	800	700	2380	3320	1310	1390	1120	1230	581	528
28	927	371	770	700	2180	2800	3000	1380	1050	1020	578	518
29	1790	356	750	740	---	2440	3740	1500	1050	871	554	736
30	1370	342	691	940	---	2210	2990	1480	983	840	538	565
31	906	---	616	1250	---	2020	---	1510	---	809	532	---
TOTAL	13081	12928	15149	30855	98260	108420	44742	36000	90943	35617	30282	13976
MEAN	422	431	489	995	3509	3497	1491	1161	3031	1149	977	466
MAX	1790	780	800	2740	7000	12100	3740	2470	15900	2390	1860	736
MIN	263	342	356	610	1640	1800	858	645	983	726	532	394
CFSM	.26	.26	.30	.61	2.14	2.13	.91	.71	1.85	.70	.60	.28
IN.	.30	.29	.34	.70	2.23	2.46	1.01	.82	2.06	.81	.69	.32

CAL YR 1981 TOTAL 246440 MEAN 675 MAX 4170 MIN 263 CFSM .41 IN 5.58
WTR YR 1982 TOTAL 530253 MEAN 1453 MAX 15900 MIN 263 CFSM .89 IN 12.01

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.
WATER TEMPERATURES: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.
SUSPENDED-SEDIMENT DISCHARGE: April 1953 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT											
05...	1130	275	416	8.2	16.0	5	140	35	12	22	2.8
NOV											
16...	1345	385	359	9.1	8.0	3	140	36	11	17	2.7
JAN											
12...	1115	1000	198	7.5	1.5	5	71	20	5.1	5.5	1.5
MAR											
02...	1245	1940	239	7.4	7.0	5	97	27	7.3	6.3	1.6
APR											
15...	1315	1090	281	8.8	14.5	<1	120	31	9.7	9.8	1.6
JUN											
03...	0900	1610	179	8.1	22.0	5	68	18	5.7	5.7	2.1
JUL											
14...	0950	1090	349	8.3	26.0	8	150	41	12	5.7	2.2
SEP											
08...	1050	454	385	8.9	22.5	15	170	44	15	17	2.6

< Actual value is known to be less than the value shown.

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
05...	140	35	15	.1	.4	230	207	<.010	.72	.150	5
NOV											
16...	130	29	12	.1	.3	203	186	<.010	1.0	.160	7
JAN											
12...	61	16	7.2	<.1	5.0	110	97	.010	1.1	.110	22
MAR											
02...	81	16	8.6	.1	5.3	134	121	.020	1.5	.050	10
APR											
15...	110	19	9.2	<.1	.4	160	147	.020	1.4	.050	31
JUN											
03...	62	15	5.9	<.1	8.5	116	98	.050	1.3	.160	84
JUL											
14...	140	17	10	.1	1.5	206	174	.020	1.8	.170	10
SEP											
08...	160	26	11	.2	.7	211	213	<.010	1.1	.140	<3

< Actual value is known to be less than the value shown.

01632000 NORTH FORK SHENANDOAH RIVER AT COOTES STORE, VA

LOCATION.--Lat 38°38'13", long 78°51'11", Rockingham County, Hydrologic Unit 02070006, on right bank at Cootes Store, 300 ft (90 m) upstream from bridge on State Highway 259, and 3.7 mi (6.0 km) upstream from Linville Creek.

DRAINAGE AREA.--210 mi² (544 km²).

PERIOD OF RECORD.--February 1925 to current year.

REVISED RECORDS.--WSP 726: 1928-31. WSP 951: 1936, 1939(M). WSP 1171: 1935, 1937, 1938(M). WSP 1502: 1926, 1927-28(M), 1929, 1930-34(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,051.8 ft (320.59 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 15, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 191 ft³/s (5.409 m³/s), 12.35 in/yr (314 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Oct. 15, 1942, gage height, 25.3 ft (7.71 m), from floodmark, from rating curve extended above 9,000 ft³/s (250 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 0.20 ft³/s (0.006 m³/s) Aug. 28, 29, Sept. 4, 1957, Sept. 7-10, 1966; minimum gage height, 1.74 ft (0.530 m) Sept. 7-10, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 20	1445	5160	146	9.54	2.908	July 23	1830	4100	116	8.59	2.618
June 13	1345	*6470	183	10.56	3.219						

Minimum discharge, 2.8 ft³/s (0.079 m³/s) Sept. 19-22, gage height, 1.98 ft (0.604 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	61	13	43	900	214	168	265	334	24	43	8.9
2	8.0	52	14	40	500	210	142	219	258	21	33	9.1
3	7.4	42	14	41	800	209	140	185	211	19	29	8.3
4	7.0	36	15	400	1300	191	143	158	348	22	25	7.2
5	6.7	33	15	684	760	184	129	136	551	24	22	6.7
6	6.4	32	15	386	490	174	127	118	517	22	691	6.1
7	5.8	30	16	270	360	292	120	106	334	19	301	5.5
8	5.4	28	16	209	330	454	111	98	234	39	435	5.5
9	5.2	26	16	173	360	426	110	88	178	81	705	6.2
10	5.1	25	16	87	330	388	107	76	175	179	290	4.8
11	5.5	23	16	59	284	347	97	66	221	482	178	4.7
12	5.6	21	16	64	236	536	92	60	764	176	128	4.4
13	6.3	20	16	70	208	544	85	54	3870	115	94	4.1
14	7.6	19	17	78	178	440	81	48	1930	74	72	3.8
15	7.8	18	21	70	158	394	75	42	721	90	58	3.8
16	6.4	17	22	65	179	641	68	38	405	95	46	3.5
17	6.5	17	21	59	1570	1260	69	35	344	94	38	3.2
18	6.7	16	22	55	1440	996	89	33	247	68	33	3.0
19	6.6	15	20	50	879	638	80	47	179	72	28	3.0
20	7.3	15	18	60	956	3160	76	162	138	166	24	2.9
21	9.5	15	17	75	1110	2140	76	123	108	189	24	2.9
22	10	14	22	66	816	1040	71	105	87	130	21	3.9
23	10	13	24	58	550	640	68	437	70	896	19	3.7
24	11	14	31	60	438	444	66	340	57	574	17	3.1
25	11	14	43	62	382	330	63	599	47	217	15	3.0
26	16	13	46	62	322	295	145	355	44	132	14	3.9
27	362	13	54	62	275	280	305	237	39	91	13	8.0
28	201	12	54	60	236	216	551	183	33	71	12	5.8
29	130	12	51	54	---	191	439	190	30	58	11	5.2
30	95	12	43	57	---	176	336	164	27	45	10	5.2
31	76	---	40	90	---	165	---	144	---	55	9.6	---
TOTAL	1062.7	678	764	3669	16347	17615	4229	4911	12501	4340	3438.6	149.4
MEAN	34.3	22.6	24.6	118	584	568	141	158	417	140	111	4.98
MAX	362	61	54	684	1570	3160	551	599	3870	896	705	9.1
MIN	5.1	12	13	40	158	165	63	33	27	19	9.6	2.9
CFSM	.16	.11	.12	.56	2.78	2.71	.67	.75	1.99	.67	.53	.02
IN.	.19	.12	.14	.65	2.90	3.12	.75	.87	2.21	.77	.61	.03

CAL YR 1981 TOTAL 26474.5 MEAN 72.5 MAX 1330 MIN 1.5 CFSM .35 IN 4.69
WTR YR 1982 TOTAL 69704.7 MEAN 191 MAX 3870 MIN 2.9 CFSM .91 IN 12.35

01632900 SMITH CREEK NEAR NEW MARKET, VA

LOCATION.--38°41'36", long 78°38'35", Shenandoah County, Hydrologic Unit 02070006, on left bank 25 ft (8 m) upstream from bridge on State Highway 616, 3.6 mi (5.8 km) north of New Market, and 4.4 mi (7.1 km) upstream from mouth.

DRAINAGE AREA.--93.2 mi² (241.4 km²).

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 881.50 ft (268.681 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1963, on right bank a short distance downstream, at datum 0.71 ft (0.216 m) higher.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 71.4 ft³/s (2.022 m³/s), 10.40 in/yr (264 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s (300 m³/s) Oct. 6, 1972, gage height, 16.38 ft (4.993 m), from rating curve extended above 2,300 ft³/s (65 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 4.5 ft³/s (0.13 m³/s) Feb. 9, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 1, 1959, reached a stage of 10.7 ft (3.26 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,680 ft³/s (47.6 m³/s) at 1830 hours Mar. 20, gage height, 8.43 ft (2.569 m), no other peak above base of 650 ft³/s (18 m³/s); minimum, 8.0 ft³/s (0.23 m³/s) Oct. 1, Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	19	13	23	271	117	136	87	67	45	43	24
2	8.8	18	16	25	94	125	118	83	50	41	34	24
3	9.2	18	16	22	194	131	116	78	82	41	32	24
4	9.6	17	16	101	305	119	115	73	91	43	30	22
5	9.6	16	16	124	151	112	98	68	109	44	28	22
6	9.8	18	16	69	119	106	97	66	89	39	52	22
7	10	16	15	52	99	204	90	63	69	36	101	22
8	9.2	16	15	43	87	270	86	61	58	35	76	23
9	9.6	16	15	36	165	204	86	59	54	37	158	28
10	10	15	13	33	177	170	81	54	65	83	60	23
11	11	15	13	31	125	152	77	53	77	47	49	21
12	11	15	12	30	105	198	75	51	68	44	47	21
13	10	14	13	29	98	176	72	50	456	51	41	20
14	10	14	18	28	90	152	68	47	270	41	39	20
15	12	14	18	28	85	148	66	46	155	51	36	20
16	14	14	23	27	99	184	63	43	121	54	35	18
17	16	14	26	26	320	213	64	41	158	39	34	18
18	16	14	20	26	371	180	67	39	145	36	35	18
19	17	14	20	26	280	159	59	38	112	34	32	18
20	16	14	20	25	326	845	56	41	87	34	30	19
21	15	14	19	28	322	534	54	43	77	35	33	18
22	16	13	20	28	260	326	51	42	71	30	30	22
23	17	13	30	28	205	253	50	49	65	42	29	20
24	21	13	35	31	180	216	49	47	60	58	28	18
25	20	15	32	30	158	190	49	58	56	41	28	17
26	20	14	26	26	136	199	83	50	54	35	26	20
27	90	15	24	25	129	165	128	43	52	32	24	36
28	111	15	23	28	124	148	155	43	49	32	26	23
29	46	14	21	37	---	138	110	51	47	32	25	20
30	31	13	20	55	---	130	94	57	50	32	24	18
31	26	---	21	278	---	128	---	61	---	39	24	---
TOTAL	640.6	450	605	1398	5075	6392	2513	1685	2964	1283	1289	639
MEAN	20.7	15.0	19.5	45.1	181	206	83.8	54.4	98.8	41.4	41.6	21.3
MAX	111	19	35	278	371	845	155	87	456	83	158	36
MIN	8.8	13	12	22	85	106	49	38	47	30	24	17
CFSM	.22	.16	.21	.48	1.94	2.21	.90	.58	1.06	.44	.45	.23
IN.	.26	.18	.24	.56	2.03	2.55	1.00	.67	1.18	.51	.51	.26

CAL YR 1981 TOTAL 9820.8 MEAN 26.9 MAX 156 MIN 8.0 CFSM .29 IN 3.92
WTR YR 1982 TOTAL 24933.6 MEAN 68.3 MAX 845 MIN 8.8 CFSM .73 IN 9.95

01633000 NORTH FORK SHENANDOAH RIVER AT MOUNT JACKSON, VA

LOCATION (REVISED).--Lat 38°44'43", long 78°38'21", Shenandoah County, Hydrologic Unit 02070006, on right bank at upstream side of bridge on State Highway 698 at Mount Jackson and 0.4 mi (0.6 km) downstream from Mill Creek.

DRAINAGE AREA.--506 mi^2 (1,311 km^2).

PERIOD OF RECORD.--October 1943 to current year.

REVISED RECORDS.--WSP 1382: 1945, 1948-50(M), 1951-53(P), 1954(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 838.55 ft (255.590 m) National Geodetic Vertical Datum of 1929. Prior to July 1, 1976, nonrecording gage, and July 1, 1976, to Oct. 23, 1981, water-stage recorder, at site 400 ft (122 m) upstream at same datum.

REMARKS.--Records good except those for January, which are fair. Some diversion during low flow by irrigation at points above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 383 ft^3/s (10.85 m^3/s), 10.28 in/yr (261 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,500 ft^3/s (1,150 m^3/s) Oct. 6, 1972, gage height, 18.10 ft (5.517 m), from rating curve extended above 18,000 ft^3/s (510 m^3/s) on basis of peak runoff for flood in October 1942 for stations at Cootes Store and near Strasburg; minimum observed, 7.0 ft^3/s (0.20 m^3/s) Sept. 3, 1966, gage height, 1.97 ft (0.600 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 20.2 ft (6.16 m), from floodmarks, discharge, about 80,000 ft^3/s (2,300 m^3/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft^3/s (140 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 20	1630	7260	206	10.74	3.274	June 13	1700	*7840	222	11.15	3.399

Minimum discharge, 26 ft^3/s (0.74 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	110	53	125	1500	520	500	510	530	172	258	112
2	30	100	60	122	900	520	440	435	448	158	205	106
3	27	90	62	122	1000	525	427	385	420	154	190	100
4	28	85	60	410	1700	485	427	335	740	158	165	92
5	28	80	62	1200	1290	458	389	307	825	168	158	92
6	30	80	62	700	908	435	376	281	914	161	1020	89
7	31	76	62	500	674	604	364	265	618	144	848	87
8	30	74	62	401	530	1130	343	254	453	165	581	84
9	30	72	62	331	721	974	339	239	364	231	1800	100
10	31	70	60	243	830	866	331	216	359	445	734	79
11	33	66	60	210	652	772	319	201	453	784	510	74
12	33	64	60	180	540	914	300	190	822	401	410	74
13	32	62	60	160	485	1040	292	179	4670	327	339	71
14	32	60	62	140	422	890	277	165	3300	258	296	69
15	32	60	76	130	393	794	265	158	1440	246	262	69
16	32	57	87	120	397	914	254	151	902	413	243	69
17	32	55	84	110	1910	2050	254	141	830	661	220	66
18	32	53	81	105	2780	1740	284	131	734	327	208	66
19	35	50	74	100	1700	1240	273	131	535	262	190	69
20	33	55	71	94	1870	4090	258	201	427	292	175	69
21	33	55	69	98	2080	3800	250	250	364	406	175	69
22	36	53	76	100	1680	2090	239	216	323	311	158	69
23	37	50	97	110	1200	1420	231	469	296	996	148	74
24	40	53	112	110	974	1090	227	505	265	1510	144	66
25	50	57	119	100	842	902	224	680	243	586	138	62
26	100	55	131	96	718	842	311	560	227	401	128	64
27	450	53	135	94	640	718	565	393	224	319	125	97
28	700	53	138	98	580	618	926	315	208	277	125	81
29	230	53	131	110	---	565	800	319	193	254	122	64
30	170	50	122	120	---	520	624	335	190	224	116	60
31	140	---	112	1000	---	495	---	277	---	250	112	---
TOTAL	2603	1951	2562	7539	29916	34021	11109	9194	22317	11461	10303	2343
MEAN	84.0	65.0	82.6	243	1068	1097	370	297	744	370	332	78.1
MAX	700	110	138	1200	2780	4090	926	680	4670	1510	1800	112
MIN	26	50	53	94	393	435	224	131	190	144	112	60
CFSM	.17	.13	.16	.48	2.11	2.17	.73	.59	1.47	.73	.66	.15
IN.	.19	.14	.19	.55	2.20	2.50	.82	.68	1.64	.84	.76	.17

CAL YR 1981 TOTAL 50124 MEAN 137 MAX 1400 MIN 14 CFSM .27 IN 3.68
WTR YR 1982 TOTAL 145319 MEAN 398 MAX 4670 MIN 26 CFSM .79 IN 10.68

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA

LOCATION.--Lat 38°58'36", long 78°20'11", Warren County, Hydrologic Unit 02070006, on right bank at downstream side of bridge on State Highway 55, 1.5 mi (2.4 km) southeast of Strasburg, 2.2 mi (3.5 km) upstream from Cedar Creek, and 10 mi (16 km) upstream from confluence with South Fork.

DRAINAGE AREA.--768 mi^2 (1,989 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1925 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1001: 1931. WSP 1171: 1929(M), 1933(M), 1936-37. WSP 1302: 1928(M), 1930(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 494.03 ft (150.580 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow from unknown cause. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--57 years, 583 ft^3/s (16.51 m^3/s), 10.31 in/yr (262 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s (2,830 m^3/s) Oct. 16, 1942, gage height, 31.2 ft (9.51 m), from high-water mark in well, from rating curve extended above 46,000 ft^3/s (1,300 m^3/s); minimum, 6.0 ft^3/s (0.17 m^3/s) Feb. 9, 1934, gage height, 1.52 ft (0.463 m); minimum daily, 41 ft^3/s (1.16 m^3/s) Sept. 26, Oct. 1, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft^3/s (170 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 21	0830	8540	242	11.03	3.362	June 14	0715	*9670	274	11.90	3.627

Minimum discharge, 53 ft^3/s (1.50 m^3/s) Dec. 13, gage height, 1.63 ft (0.497 m); minimum daily, 86 ft^3/s (2.44 m^3/s) Oct. 15-22, Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	206	140	168	1180	850	769	900	437	285	267	148
2	94	177	95	155	2780	772	749	769	696	278	350	144
3	91	178	130	159	2280	757	685	678	642	255	274	162
4	91	203	99	226	3500	749	680	602	795	256	278	139
5	91	164	129	586	2470	696	672	538	1150	261	255	159
6	93	180	119	1430	1640	661	618	486	1350	246	220	127
7	93	160	100	915	1230	689	592	457	1270	277	1080	134
8	93	150	119	659	944	1110	562	424	899	275	936	131
9	91	145	114	533	832	1440	549	426	692	239	1230	131
10	90	140	111	480	1160	1290	537	392	615	388	1570	132
11	88	135	111	310	1090	1160	521	350	580	567	861	120
12	88	130	103	245	875	1100	495	330	683	895	610	149
13	88	125	86	265	748	1360	470	291	2320	542	501	126
14	87	120	150	310	676	1360	454	292	7610	432	417	129
15	86	120	115	315	610	1210	434	274	3130	364	364	131
16	86	115	120	290	599	1320	418	300	1820	298	326	119
17	86	110	174	255	862	2500	404	221	1370	558	301	113
18	86	110	117	230	3420	2780	416	235	1300	691	267	132
19	86	105	146	260	2650	2160	451	230	1030	438	228	91
20	86	110	150	300	2380	2090	426	198	789	335	262	124
21	86	110	139	350	2720	6910	400	263	656	353	190	125
22	86	105	175	330	2670	3990	386	392	560	483	227	107
23	87	105	160	315	2080	2530	362	384	504	434	223	135
24	118	110	134	335	1660	1920	356	632	449	1530	195	140
25	123	110	160	315	1410	1560	346	711	405	1310	204	127
26	156	110	190	290	1210	1360	403	871	375	706	192	129
27	295	105	210	270	1030	1260	604	738	350	512	193	153
28	905	105	220	250	938	1060	1110	567	335	412	144	133
29	841	105	225	245	---	931	1370	464	332	371	161	167
30	458	105	215	290	---	847	1120	419	306	337	161	151
31	316	---	190	400	---	794	---	490	---	321	168	---
TOTAL	5260	3953	4446	11481	45644	49216	17359	14324	33450	14649	12655	4008
MEAN	170	132	143	370	1630	1588	579	462	1115	473	408	134
MAX	905	206	225	1430	3500	6910	1370	900	7610	1530	1570	167
MIN	86	105	86	155	599	661	346	198	306	239	144	91
CFSM	.22	.17	.19	.48	2.12	2.07	.75	.60	1.45	.62	.53	.17
IN.	.25	.19	.22	.56	2.21	2.38	.84	.69	1.62	.71	.61	.19

CAL YR 1981 TOTAL 89646 MEAN 246 MAX 1760 MIN 69 CFSM .32 IN 4.34
WTR YR 1982 TOTAL 216445 MEAN 593 MAX 7610 MIN 86 CFSM .77 IN 10.48

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1949, 1952, 1956, 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1956.
WATER TEMPERATURES: October 1948 to September 1949, October 1955 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
OCT 05...	1030	92	364	8.4	14.5	5	160	37	16	20	2.1
NOV 16...	1015	115	354	8.6	7.0	5	160	41	14	9.7	2.1
JAN 12...	0945	997	290	7.3	1.0	5	130	38	9.0	6.4	1.8
MAR 02...	0930	768	286	8.2	5.0	3	130	37	9.0	4.5	1.4
APR 15...	1100	434	333	8.4	13.0	<1	140	38	11	5.4	1.2
JUN 03...	1030	642	280	8.1	22.5	<1	130	35	9.6	4.7	2.2
JUL 14...	1300	434	306	8.2	24.5	16	140	41	8.9	2.8	3.4
SEP 08...	1250	178	345	8.8	22.5	20	150	28	19	18	1.9

< Actual value is known to be less than the value shown.

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT 05...	150	15	23	<.1	.2	207	203	.010	.14	.020	4
NOV 16...	140	18	10	.1	.1	192	179	<.010	.75	.020	13
JAN 12...	110	21	9.2	<.1	4.6	173	156	.020	2.2	.050	17
MAR 02...	100	18	7.8	<.1	4.7	165	143	.010	2.0	.030	13
APR 15...	140	17	8.9	<.1	.9	185	167	.010	1.5	.010	20
JUN 03...	116	14	7.7	<.1	7.7	160	151	.030	1.4	.130	15
JUL 14...	122	12	7.4	.1	5.0	192	154	.020	1.7	.100	43
SEP 08...	132	20	21	.2	.4	177	188	<.010	.66	<.010	6

< Actual value is known to be less than the value shown.

01634500 CEDAR CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°04'52", long 78°19'47", Frederick County, Hydrologic Unit 02070006, on left bank 0.2 mi (0.3 km) upstream from Fawcett Run, 0.3 mi (0.5 km) upstream from bridge on State Highway 628, 1.3 mi (2.1 km) downstream from Froman Run, and 11.4 mi (18.3 km) southwest of Winchester.

DRAINAGE AREA.--103 mi^2 (267 km^2).

PERIOD OF RECORD.--June 1937 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 647.09 ft (197.233 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 92.4 ft^3/s (2.617 m^3/s), 12.18 in/yr (309 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s (623 m^3/s) Oct. 15, 1942, gage height, 27.0 ft (8.23 m), from floodmarks, from rating curve extended above 15,000 ft^3/s (420 m^3/s); minimum, 1.8 ft^3/s (0.051 m^3/s) Feb. 19, 1941, Dec. 7, 1958, result of freezeups; minimum daily, 2.8 ft^3/s (0.079 m^3/s) Sept. 7, 1964, Sept. 3, 4, 7, 8, 1966; minimum gage height, 1.04 ft (0.317 m) Feb. 19, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1936, reached a stage of about 25 ft (7.6 m), discharge, about 18,000 ft^3/s (510 m^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 4	----	Unknown		Ice Jam	
Feb. 17	1700	1090	30.9	4.79	1.460
Feb. 21	0300	1180	33.4	4.98	1.518
Mar. 16	2300	3620	103	9.30	2.835
Mar. 20	1400	1660	47.0	5.95	1.814
Mar. 21	1100	1580	44.7	5.79	1.765
June 5	1200	1620	45.9	5.86	1.786
June 13	1130	*4600	130	10.92	3.328
June 16	2300	1560	44.2	5.75	1.753

Minimum discharge, 9.6 ft^3/s (0.27 m^3/s) Oct. 1, Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	24	18	30	437	133	109	150	97	31	22	12
2	11	22	34	36	296	117	95	126	105	28	18	14
3	13	21	36	35	1140	111	198	108	220	31	18	14
4	14	19	31	219	2260	99	236	95	263	41	17	12
5	12	19	28	188	768	90	148	84	904	34	16	11
6	12	28	24	111	294	82	142	76	390	30	15	11
7	12	26	23	87	216	134	111	71	198	27	15	11
8	12	21	22	69	168	188	99	69	138	25	18	11
9	12	21	21	54	180	170	104	68	99	28	59	12
10	12	19	18	45	180	160	106	58	133	41	33	12
11	13	18	19	35	133	145	92	52	122	30	23	12
12	14	18	18	30	111	368	85	50	99	33	22	12
13	14	17	21	25	102	285	81	46	2510	25	19	11
14	13	16	25	23	92	216	76	42	875	23	17	11
15	14	16	29	22	100	200	69	38	365	28	16	11
16	14	17	29	21	205	1160	65	35	456	34	18	12
17	14	16	29	20	775	1750	66	34	597	42	21	11
18	14	17	27	19	485	625	97	32	255	26	16	10
19	16	16	27	19	327	382	76	30	175	25	14	11
20	18	17	26	20	583	951	69	29	128	47	14	11
21	15	18	25	21	1010	1150	66	28	99	51	14	11
22	15	16	26	21	636	608	61	33	79	33	14	13
23	17	16	37	20	421	362	58	37	69	104	13	16
24	20	16	57	20	376	279	55	39	59	58	14	14
25	20	18	43	20	267	228	54	36	54	35	14	12
26	21	17	40	20	200	228	139	33	49	28	12	14
27	177	18	36	20	172	178	323	30	46	24	12	29
28	129	19	33	20	152	148	570	32	42	24	14	18
29	51	18	30	21	---	131	246	39	38	28	12	14
30	35	17	26	23	---	117	180	31	37	23	12	13
31	28	---	24	90	---	115	---	28	---	28	12	---
TOTAL	792	561	882	1404	12086	10910	3876	1659	8701	1065	554	386
MEAN	25.5	18.7	28.5	45.3	432	352	129	53.5	290	34.4	17.9	12.9
MAX	177	28	57	219	2260	1750	570	150	2510	104	59	29
MIN	10	16	18	19	92	82	54	28	37	23	12	10
CFSM	.25	.18	.28	.44	4.19	3.42	1.25	.52	2.82	.33	.17	.13
IN.	.29	.20	.32	.51	4.36	3.94	1.40	.60	3.14	.38	.20	.14

CAL YR 1981 TOTAL 17020.4 MEAN 46.6 MAX 959 MIN 7.0 CFSM .45 IN 6.15
WTR YR 1982 TOTAL 42876.0 MEAN 117 MAX 2510 MIN 10 CFSM 1.14 IN 15.49

01635500 PASSAGE CREEK NEAR BUCKTON, VA

LOCATION.--Lat 38°57'29", long 78°16'01", Warren County, Hydrologic Unit 02070006, on right bank 350 ft (107 m) upstream from bridge on State Highway 55, 1.2 mi (1.9 km) south of Buckton railroad station, 1.4 mi (2.3 km) upstream from mouth, and 4.2 mi (6.8 km) west of Riverton.

DRAINAGE AREA.--87.8 mi² (227.4 km²).

PERIOD OF RECORD.--October 1905 to July 1906 (gage heights only), April 1932 to current year. Prior to October 1966, published as "at Buckton."

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 525.14 ft (160.063 m) National Geodetic Vertical Datum of 1929. October 1905 to July 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum. Apr. 4, 1932, to Oct. 7, 1937, nonrecording gage at site 350 ft (107 m) downstream at different datum.

REMARKS.--Records good except those for January, which are fair. Occasional diurnal fluctuation during low flow caused by State Fish Hatchery 2 mi (3 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--50 years, 68.1 ft³/s (1.929 m³/s), 10.53 in/yr (267 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s) Oct. 15, 1942, gage height, 15.5 ft (4.72 m), from high-water mark in well, from rating curve extended above 5,200 ft³/s (150 m³/s); minimum observed, 0.1 ft³/s (0.003 m³/s) Aug. 5, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 20	2100	1060	30.0	6.13	1.868
June 13	2330	*2130	60.3	7.73	2.356

Minimum discharge, 1.6 ft³/s (0.045 m³/s) Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	20	12	26	400	132	102	92	99	16	12	5.8
2	3.8	18	15	25	160	130	86	84	102	14	10	5.4
3	3.6	16	18	28	210	120	84	76	74	14	9.7	5.8
4	5.2	15	16	133	380	109	80	69	220	18	12	5.4
5	5.8	14	15	163	209	104	67	60	256	17	10	6.5
6	5.8	20	14	98	166	94	67	55	213	16	8.3	4.8
7	5.0	25	14	78	138	151	63	52	135	14	14	4.2
8	4.8	18	14	63	116	248	55	57	109	12	15	3.8
9	5.0	16	13	50	160	182	57	58	82	13	17	3.8
10	5.0	15	12	40	182	156	58	49	111	15	25	3.8
11	5.2	14	12	31	132	142	52	42	125	14	16	3.8
12	5.8	14	12	26	114	150	49	38	96	12	14	4.0
13	5.2	13	11	23	107	145	47	33	1020	11	13	3.5
14	5.4	13	12	20	98	135	46	32	969	10	11	3.2
15	5.2	12	18	18	96	135	42	30	320	9.7	10	3.8
16	5.2	12	33	16	104	237	39	28	193	9.7	8.8	3.8
17	5.0	12	26	16	261	487	40	24	209	16	8.3	3.3
18	5.2	12	26	15	340	256	47	22	176	42	8.0	3.0
19	7.3	11	20	15	256	193	44	20	120	39	7.8	3.0
20	5.8	12	20	16	407	533	39	19	92	20	6.9	3.0
21	5.6	12	20	17	608	707	38	22	71	15	6.7	2.5
22	5.2	12	24	17	416	384	34	29	58	14	6.9	3.3
23	6.2	11	42	16	280	260	32	27	50	17	9.1	4.2
24	7.3	11	78	16	240	197	31	35	39	22	8.0	6.2
25	8.0	12	50	16	190	166	30	28	33	15	7.3	5.8
26	8.6	12	39	16	153	163	69	25	31	12	7.1	6.2
27	83	12	34	15	142	132	142	22	29	10	5.4	11
28	143	12	32	15	138	114	197	20	25	9.1	5.2	13
29	53	12	28	16	---	104	125	23	23	9.1	4.8	9.1
30	33	11	23	18	---	96	102	39	21	9.7	4.8	6.9
31	24	---	22	95	---	94	---	43	---	11	4.8	---
TOTAL	480.6	419	725	1157	6203	6256	1964	1253	5101	476.3	306.9	151.9
MEAN	15.5	14.0	23.4	37.3	222	202	65.5	40.4	170	15.4	9.90	5.06
MAX	143	25	78	163	608	707	197	92	1020	42	25	13
MIN	3.6	11	11	15	96	94	30	19	21	9.1	4.8	2.5
CFSM	.18	.16	.27	.43	2.53	2.30	.75	.46	1.94	.18	.11	.06
IN.	.20	.18	.31	.49	2.63	2.65	.83	.53	2.16	.20	.13	.06

CAL YR 1981 TOTAL 10336.4 MEAN 28.3 MAX 388 MIN 1.6 CFSM .32 IN 4.38
WTR YR 1982 TOTAL 24493.7 MEAN 67.1 MAX 1020 MIN 2.5 CFSM .76 IN 10.38

01636500 SHENANDOAH RIVER AT MILLVILLE, WV
(National stream-quality accounting network station)

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi (0.6 km) downstream from Cattail Run, 1.0 mi (1.6 km) upstream from Millville, 5.0 mi (8.0 km) upstream from Harpers Ferry, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--3,040 mi^2 (7,874 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-2, 1905, 1907-8, 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 293.00 ft (89.306 m) National Geodetic Vertical Datum of 1929. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi (1.3 km) downstream at datum 0.32 ft (0.098 m) higher.

REMARKS.--Records good except those for January, which are poor. Regulation by hydroelectric plants, particularly that of Potomac Light and Power Co., 0.5 mi (0.8 km) upstream from station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--67 years (water years 1896-1908, 1929-82), 2,678 ft^3/s (75.84 m^3/s), 11.96 in/yr (304 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft^3/s (6,510 m^3/s) Oct. 16, 1942, gage height, 32.4 ft (9.88 m), from floodmarks; minimum, about 59 ft^3/s (1.67 m^3/s) Oct. 4, 1930, gage height, 0.39 ft (0.119 m); minimum daily, 194 ft^3/s (5.49 m^3/s) July 24, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft (8.035 m), discharge, 151,000 ft^3/s (4,280 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15,000 ft^3/s (420 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 4	1415	20600	583	9.91	3.021	June 15	0330	*29400	833	11.77	3.587
Mar. 22	0030	24700	700	10.83	3.301						

Minimum discharge, 331 ft^3/s (9.37 m^3/s) Nov. 14, gage height, 1.12 ft (0.341 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	449	1530	561	1040	2640	3760	3530	4570	2210	1670	1350	800
2	449	1120	589	1050	4890	3500	3410	3880	2370	1550	1370	813
3	446	1080	630	1020	11200	3310	3240	3380	3030	1540	1670	850
4	418	976	607	1230	10300	3250	3080	3000	3130	1570	1520	776
5	423	893	592	1860	13200	3310	2980	2650	3990	1460	1300	764
6	432	865	617	2500	8870	3100	2960	2370	5630	1410	1200	726
7	427	788	616	4580	6350	3050	2790	2210	5500	1350	1260	716
8	422	794	659	3740	5090	3700	2600	2090	4880	1410	2120	720
9	427	771	561	2960	4290	5510	2540	1960	3910	1430	2810	666
10	427	721	586	2100	4190	5930	2470	1930	3180	1290	3460	630
11	418	681	572	1300	4940	5310	2430	1800	2950	1530	3020	656
12	416	670	557	1100	4370	4950	2360	1660	2860	2250	2260	681
13	374	665	551	1200	3770	5000	2180	1590	4480	2110	1840	632
14	423	616	547	1400	3300	5140	2170	1480	16600	1930	1650	645
15	414	622	632	1400	2980	4810	2030	1430	25400	1800	1510	578
16	371	630	710	1300	2780	4800	1890	1370	14000	1560	1250	647
17	440	603	720	1100	3090	7290	1910	1210	9790	1880	1400	680
18	396	606	792	1000	5610	8420	1900	1270	7710	2170	2310	598
19	392	565	828	1100	11200	7460	1870	1260	6410	1980	2000	562
20	394	621	709	1300	10300	6930	1910	1160	5080	1770	1630	573
21	423	552	586	1500	11500	14700	1940	1110	4130	1720	1510	562
22	414	554	618	1600	10800	21500	1840	1180	3500	2240	1240	618
23	400	584	856	1400	8760	13700	1800	1280	3040	2360	1050	638
24	464	556	931	1500	7060	9630	1690	1420	2650	2130	1030	579
25	443	569	994	1400	6000	7620	1590	1460	2430	3640	1030	661
26	555	571	1000	1300	5200	6440	1700	2540	2230	3560	896	688
27	621	564	1060	1200	4560	5760	2130	2340	2060	2410	900	799
28	1360	562	1170	1100	4060	5160	3150	2350	1900	1850	864	885
29	2410	556	1140	1100	---	4470	5770	2440	1780	1630	846	755
30	2800	562	1120	1300	---	3960	5570	2400	1780	1440	800	835
31	1990	---	1060	1660	---	3660	---	2160	---	1410	805	---
TOTAL	20238	21447	23171	49340	181300	195130	77430	62950	158610	58050	47901	20733
MEAN	653	715	747	1592	6475	6295	2581	2031	5287	1873	1545	691
MAX	2800	1530	1170	4580	13200	21500	5770	4570	25400	3640	3460	885
MIN	371	552	547	1000	2640	3050	1590	1110	1780	1290	800	562
CFSM	.22	.24	.25	.52	2.13	2.07	.85	.67	1.74	.62	.51	.23
IN.	.25	.26	.28	.60	2.22	2.39	.95	.77	1.94	.71	.59	.25

CAL YR 1981 TOTAL 408343 MEAN 1119 MAX 4950 MIN 371 CFSM .37 IN 5.00
WTR YR 1982 TOTAL 916300 MEAN 2510 MAX 25400 MIN 371 CFSM .83 IN 11.21

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-63, 1965, 1969-71, 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to current year.
WATER TEMPERATURES: October 1980 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1980.

REMARKS.--Periods of missing record due to instrument malfunction.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 777 micromhos Oct. 27; minimum, 212 micromhos Jan. 17.
WATER TEMPERATURES: Maximum daily, 29°C July 18, 19; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)
NOV 02...	1115	631	480	8.1	20.0	14.0	4.5	10.2	36	480	150	24
JAN 19...	1045	1100	405	7.3	-6.0	.0	1.5	14.8	<1	K12	130	38
MAR 15...	1030	4830	260	7.9	5.0	7.0	8.0	14.6	29	230	110	24
MAY 10...	1045	1950	350	8.2	17.5	17.5	1.9	9.0	K46	530	120	19
JUL 13...	1115	2260	405	8.5	28.0	26.0	3.2	7.8	170	K12000	160	17
SEP 20...	1245	564	490	8.1	21.0	21.5	3.7	8.0	K16	380	190	34

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 02...	42	12	29	29	1.1	2.0	130	60	20	.1	3.1	262
JAN 19...	38	8.7	29	32	1.2	2.2	93	65	10	<.1	5.0	222
MAR 15...	30	7.4	9.2	16	.4	1.4	81	26	8.5	<.1	4.8	151
MAY 10...	33	8.4	16	23	.7	1.5	98	40	9.3	.1	2.9	174
JUL 13...	42	13	19	20	.7	2.1	141	36	12	.1	1.4	258
SEP 20...	48	16	34	28	1.2	2.8	152	60	23	.2	2.1	295

< Actual value is known to be less than the value shown.

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS TOTAL (MG/L AS PO4)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 02...	246	.36	446	1.6	.050	.06	1.20	.250	.77	.230	.210	.64
JAN 19...	214	.30	659	1.5	.110	.14	.51	.100	.31	.090	.080	.25
MAR 15...	136	.21	1970	--	--	--	--	--	--	--	--	--
MAY 10...	170	.24	916	.88	.050	.06	.65	.090	.28	.070	.070	.21
JUL 13...	210	.35	1570	1.2	.020	.03	.70	.100	.31	.060	.060	.18
SEP 20...	278	.40	449	1.0	.050	.06	1.10	.200	.61	.130	.130	.40

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)
NOV 02...	1	0	2	100	70	30	<1	<1	10	--
MAR 15...	1	0	1	100	60	36	3	<1	30	10
MAY 10...	2	1	1	<100	--	35	<1	<1	20	10
SEP 20...	2	0	2	100	50	51	1	2	10	--

< Actual value is known to be less than the value shown.

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
NOV 02...	<10	2	<1	45	42	3	270	240	27	79
MAR 15...	20	2	<1	7	5	2	630	610	17	7
MAY 10...	10	3	<1	4	1	3	210	--	<3	6
SEP 20...	<10	1	<1	5	0	5	430	420	13	2

< Actual value is known to be less than the value shown.

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
NOV 02...	77	2	30	20	10	<.1	--	<.1	4
MAR 15...	6	<1	40	40	4	.1	--	<.1	3
MAY 10...	0	6	30	30	3	.1	--	<.1	4
SEP 20...	0	2	20	10	8	.2	.0	.2	4

< Actual value is known to be less than the value shown.

DATE	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 02...	0	5	<1	<1	<1	<1	90	80	8
MAR 15...	2	1	<1	<1	<1	<1	40	--	<4
MAY 10...	0	4	<1	<1	<1	<1	60	60	3
SEP 20...	2	2	<1	<1	<1	<1	20	--	<4

< Actual value is known to be less than the value shown.

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV			
02...	100	11	19
JAN			
19...	80	56	166
MAR			
15...	86	32	417
JUL			
13...	62	24	146
SEP			
20...	100	10	15

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	530	484	511	481	476	479	624	608	619	505	499	502
2	537	481	514	486	475	482	606	578	588	500	489	497
3	552	498	534	473	464	467	609	584	602	495	487	492
4	579	523	548	480	470	476	612	607	609	492	487	489
5	594	544	570	482	468	477	622	612	619	487	481	485
6	598	546	578	470	464	466	622	617	619	483	435	464
7	614	542	585	488	470	478	619	612	617	431	359	378
8	624	572	602	510	491	503	611	596	605	356	336	342
9	635	577	612	511	475	498	600	594	596	340	333	337
10	650	599	629	488	468	474	603	600	601	334	301	326
11	652	573	634	510	489	502	611	604	609	329	285	315
12	652	594	628	508	499	504	611	603	607	335	328	331
13	647	578	626	508	504	506	603	600	602	334	330	332
14	654	612	635	507	501	505	606	603	605	333	326	329
15	667	633	649	509	505	508	602	588	595	390	290	350
16	668	602	642	508	499	504	589	573	581	397	292	378
17	656	595	625	518	500	509	627	574	597	377	212	317
18	658	605	635	526	519	522	647	630	639	393	375	381
19	669	609	643	551	526	536	656	649	654	413	393	406
20	665	610	648	570	553	564	654	628	641	420	406	413
21	674	614	648	571	564	567	627	604	616	434	419	426
22	702	620	662	566	561	564	603	586	594	465	435	452
23	732	667	705	588	568	577	584	565	576	473	461	467
24	749	698	728	596	588	594	563	549	558	477	431	463
25	753	692	732	594	588	591	573	549	560	482	405	457
26	770	711	741	588	577	582	593	575	586	503	407	478
27	777	684	738	623	586	605	573	562	565	519	387	469
28	732	635	696	633	625	631	565	512	538	512	474	492
29	706	610	662	631	626	629	510	500	504	501	484	496
30	639	391	463	627	624	626	503	497	501	492	476	485
31	476	414	460	---	---	---	503	495	498	493	436	456
MONTH	777	391	622	633	464	531	656	495	590	519	212	420

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	534	441	499	290	283	288	318	313	315	310	302	304
2	501	396	467	289	280	284	325	316	319	303	297	299
3	345	318	325	281	276	278	330	326	329	295	294	295
4	405	276	345	286	278	282	334	330	332	299	294	296
5	274	249	256	287	284	286	339	331	335	304	299	302
6	258	249	254	285	283	284	339	332	335	225	218	222
7	260	256	259	290	285	287	339	332	336	230	222	226
8	259	252	255	294	290	293	341	328	335	238	229	234
9	268	259	264	295	284	292	350	342	345	240	237	239
10	273	268	270	284	278	280	349	344	348	335	239	296
11	277	273	275	280	277	278	349	345	347	343	336	340
12	281	274	278	281	275	279	346	341	344	345	341	342
13	284	279	281	275	267	270	345	342	343	354	347	350
14	291	283	287	267	262	265	352	345	349	372	357	368
15	297	292	295	265	262	264	350	342	344	378	369	374
16	299	295	296	265	263	265	348	344	346	383	365	374
17	299	294	296	264	262	263	348	342	345	395	384	389
18	302	287	295	261	250	253	353	343	347	406	396	401
19	286	257	270	252	250	251	354	352	353	412	402	408
20	285	264	275	255	251	253	359	353	356	402	397	399
21	275	243	253	304	255	266	358	350	353	403	397	400
22	245	240	242	298	230	264	355	346	350	403	400	401
23	243	239	241	235	224	228	349	346	348	410	403	406
24	245	240	242	251	237	244	353	348	351	412	400	407
25	252	242	247	265	251	258	359	351	355	406	390	398
26	260	252	255	274	264	269	358	353	356	396	392	395
27	268	259	265	282	273	279	367	356	362	397	372	384
28	282	268	274	295	282	289	368	342	361	395	370	382
29	---	---	---	303	295	300	340	311	324	427	409	422
30	---	---	---	311	303	306	317	310	314	460	424	446
31	---	---	---	318	308	313	---	---	---	439	407	421
MONTH	534	239	288	318	224	275	368	310	343	460	218	352

		JUNE			JULY			AUGUST			SEPTEMBER	
1	421	404	411	361	353	358	495	479	486	504	499	502
2	409	403	407	361	356	360	508	495	502	515	501	508
3	420	391	410	357	353	356	519	507	514	512	501	505
4	393	381	386	366	354	360	512	507	510	499	487	494
5	389	360	379	365	360	362	508	506	507	---	---	---
6	369	357	362	365	360	362	507	502	504	499	494	497
7	357	340	345	367	364	365	522	506	513	497	490	493
8	351	344	348	376	366	370	525	513	521	497	488	493
9	366	353	359	396	377	387	514	502	508	499	496	498
10	371	366	369	405	396	401	516	488	506	500	495	497
11	390	370	381	410	404	407	487	458	474	501	495	497
12	397	391	395	419	409	412	469	451	460	499	470	490
13	395	383	391	426	415	422	475	462	468	509	473	502
14	385	264	350	573	416	539	465	447	454	513	501	508
15	313	271	288	604	556	573	476	458	467	513	489	507
16	277	270	272	598	544	562	485	475	481	505	488	500
17	290	277	285	551	520	541	493	482	486	505	498	501
18	298	291	295	520	512	515	497	487	493	498	491	495
19	311	299	307	522	499	509	496	476	489	495	484	489
20	320	312	316	497	480	488	485	458	474	551	472	487
21	330	320	325	497	482	490	484	463	477	478	473	475
22	338	331	335	515	499	509	486	480	482	479	468	474
23	345	339	341	511	454	476	487	475	483	468	461	464
24	351	346	348	490	452	471	474	451	460	485	465	472
25	357	352	354	493	488	491	---	---	---	505	485	496
26	362	358	360	492	459	477	473	468	470	522	508	516
27	364	353	359	459	437	447	485	472	477	514	498	508
28	369	356	363	446	435	438	492	480	487	497	478	487
29	366	355	362	464	445	455	498	485	493	478	473	475
30	361	352	357	474	463	469	504	494	499	478	471	473
31	---	---	---	483	474	480	507	502	505	---	---	---
MONTH	421	264	352	604	353	447	525	447	488	551	461	493
YEAR	777	212	434									

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	18.0	18.5	13.0	12.0	12.5	4.5	4.0	4.0	1.5	1.0	1.5
2	19.0	17.5	18.0	13.5	13.0	13.0	4.0	3.5	4.0	2.0	1.5	1.5
3	17.5	15.5	16.5	14.0	13.5	14.0	5.0	4.0	4.5	2.0	1.5	2.0
4	15.5	15.0	15.0	14.0	13.5	14.0	6.0	5.0	5.5	2.5	1.5	2.0
5	16.5	15.0	15.5	14.0	13.5	13.5	6.0	5.5	6.0	3.0	2.5	3.0
6	17.0	16.5	16.5	14.0	13.0	13.5	5.5	5.0	5.0	3.0	2.5	2.5
7	16.5	15.5	16.0	12.5	11.0	11.5	5.0	4.5	4.5	3.5	3.0	3.5
8	15.5	14.0	14.5	11.0	10.5	10.5	4.5	4.0	4.5	3.0	2.5	3.0
9	14.5	13.5	14.0	11.0	10.0	10.5	4.5	3.0	3.5	2.5	1.5	2.0
10	14.5	13.5	14.0	10.5	9.5	10.0	3.0	2.0	2.5	1.5	.0	.0
11	14.0	13.5	13.5	10.0	9.5	9.5	2.0	1.5	2.0	.5	.0	.0
12	14.0	13.5	13.5	9.5	8.5	9.0	2.0	1.5	1.5	.5	.0	.0
13	14.5	13.0	13.5	8.5	8.0	8.0	2.0	1.0	1.5	.0	.0	.0
14	14.5	13.5	14.0	8.0	7.0	7.5	1.5	1.0	1.0	.0	.0	.0
15	14.5	13.0	14.0	8.0	7.0	7.5	1.0	.5	.5	.0	.0	.0
16	15.0	13.5	14.0	8.5	8.0	8.5	1.0	.5	.5	.5	.0	.0
17	15.0	14.0	14.5	9.0	8.5	8.5	1.0	.5	1.0	.0	.0	.0
18	14.0	13.5	14.0	8.5	8.0	8.5	1.0	.5	.5	.5	.0	.0
19	14.0	12.5	13.0	8.5	8.0	8.0	1.0	.5	.5	.0	.0	.0
20	12.5	11.0	12.0	9.0	8.5	8.5	.5	.0	.5	.5	.0	.0
21	12.5	11.0	12.0	8.5	7.0	8.0	.5	.0	.5	.0	.0	.0
22	13.0	12.0	12.5	7.0	6.0	6.5	.5	.5	.5	.0	.0	.0
23	13.0	13.0	13.0	5.5	5.0	5.5	1.0	.5	.5	.0	.0	.0
24	13.5	12.0	12.5	5.0	4.5	4.5	1.0	.5	.5	.0	.0	.0
25	12.5	11.5	12.0	4.5	4.0	4.0	1.0	.5	.5	.0	.0	.0
26	11.5	11.0	11.0	4.5	4.0	4.0	1.0	1.0	1.0	.0	.0	.0
27	12.0	11.0	11.5	5.0	4.0	4.5	1.5	1.0	1.5	.0	.0	.0
28	13.5	12.0	12.5	5.0	5.0	5.0	2.0	1.5	2.0	.0	.0	.0
29	13.5	12.5	13.0	5.0	4.5	5.0	2.5	2.0	2.5	.5	.0	.0
30	12.5	12.0	12.5	5.0	4.5	4.5	2.0	2.0	2.0	.5	.0	.0
31	12.5	12.5	12.5	---	---	---	1.5	1.0	1.5	.5	.0	.0
MONTH	19.0	11.0	14.0	14.0	4.0	8.5	6.0	.0	2.0	3.5	.0	.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.5	.0	.0	4.5	3.0	4.0	11.5	9.0	10.5	15.5	15.0	15.0
2	.5	.0	.0	4.0	3.5	4.0	12.5	10.0	11.0	16.5	15.0	15.5
3	.0	.0	.0	4.5	3.5	4.0	12.0	11.0	11.5	17.5	15.0	16.5
4	.5	.0	.0	4.5	3.5	4.0	11.5	10.5	11.0	18.0	16.0	17.0
5	1.5	.0	.5	5.0	3.5	4.0	10.5	9.5	10.0	18.0	16.5	17.5
6	2.0	1.5	1.5	4.5	4.0	4.0	10.5	7.0	9.0	20.0	18.5	19.0
7	2.0	1.0	1.5	4.0	3.5	3.5	7.0	5.5	6.5	21.5	19.5	20.5
8	2.0	1.5	1.5	4.0	3.0	3.5	8.0	6.5	7.0	20.5	19.5	20.0
9	2.0	1.5	2.0	4.5	3.0	4.0	7.5	7.0	7.5	20.0	18.5	19.5
10	2.0	1.0	1.5	4.5	3.5	4.0	8.5	7.0	7.5	20.0	18.0	19.0
11	2.5	1.0	1.5	6.5	4.5	5.5	10.0	8.0	9.0	20.0	18.0	19.0
12	2.0	1.5	1.5	8.5	6.5	7.5	10.5	8.5	9.5	21.5	18.5	20.0
13	2.0	1.5	2.0	9.0	8.0	8.5	11.5	10.0	10.5	22.5	20.5	21.5
14	2.5	1.0	1.5	9.0	8.5	8.5	13.0	11.0	12.0	23.0	21.5	22.0
15	3.5	1.5	2.5	8.5	7.5	8.0	13.5	12.0	12.5	23.0	21.5	22.5
16	5.0	3.5	4.0	7.5	6.5	7.0	15.0	12.0	13.5	23.5	22.0	22.5
17	5.0	3.5	4.5	7.5	6.5	7.0	17.5	14.5	16.0	24.5	22.5	23.5
18	3.5	2.5	3.0	8.5	6.5	7.5	17.5	16.0	17.0	25.0	24.0	24.5
19	3.5	2.0	2.5	9.0	8.0	8.5	16.5	15.0	16.0	25.0	24.0	24.5
20	4.0	3.0	3.5	9.0	8.5	8.5	16.5	15.0	16.0	24.5	23.5	24.0
21	4.5	3.5	4.0	8.5	8.0	8.5	17.0	15.5	16.0	24.0	23.5	23.5
22	4.5	4.0	4.5	8.0	7.5	8.0	16.0	15.0	15.5	23.5	22.0	22.5
23	5.0	4.0	4.5	8.5	7.0	8.0	15.5	13.5	14.5	22.0	20.0	20.5
24	5.0	4.5	5.0	9.5	7.5	8.5	16.5	14.0	15.5	19.5	19.0	19.5
25	5.0	4.5	5.0	10.5	8.5	9.5	17.0	15.5	16.5	20.5	19.5	20.0
26	4.5	3.5	4.0	10.5	9.5	9.5	17.0	16.0	16.5	21.5	20.5	21.0
27	4.0	3.5	4.0	9.5	7.5	8.5	16.5	15.5	16.0	23.0	21.0	22.0
28	4.5	3.0	3.5	8.0	7.0	7.5	16.5	14.5	15.5	23.0	22.5	22.5
29	---	---	---	8.5	6.5	7.5	16.0	14.5	15.5	24.0	22.5	23.5
30	---	---	---	9.5	7.5	8.5	16.0	15.0	15.5	25.0	23.5	24.0
31	---	---	---	10.5	8.5	9.5	---	---	---	26.0	24.0	25.0
MONTH	5.0	.0	2.5	10.5	3.0	6.5	17.5	5.5	12.5	26.0	15.0	21.0

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	26.5	25.0	25.5	25.5	24.0	24.5	26.0	25.0	25.5	23.5	22.5	23.5
2	25.5	24.0	25.0	25.0	23.5	24.5	26.0	25.0	25.5	25.5	23.5	24.5
3	24.5	22.5	23.5	25.0	23.5	24.0	26.0	24.5	25.0	25.5	25.0	25.5
4	22.0	20.5	21.0	23.5	22.5	23.0	26.0	25.0	25.5	24.5	23.5	24.5
5	20.5	19.5	20.0	24.0	23.0	23.5	27.5	26.0	27.0	23.5	22.5	23.0
6	19.5	18.5	19.0	24.5	23.5	24.0	27.5	27.0	27.5	23.5	22.0	23.0
7	19.5	18.0	18.5	26.0	24.0	25.0	27.0	26.0	26.5	24.0	22.5	23.5
8	20.5	18.5	19.5	26.5	25.5	26.0	26.5	25.5	26.0	23.5	22.5	23.0
9	22.0	19.5	21.0	26.5	25.5	26.0	26.0	26.0	26.0	23.0	22.0	22.5
10	21.5	20.5	21.0	27.0	26.0	26.5	26.5	25.5	26.0	23.5	22.0	23.0
11	21.0	20.0	20.5	27.0	26.0	26.5	25.5	23.5	25.0	24.5	22.5	23.5
12	21.0	20.0	20.5	27.0	26.0	26.5	24.0	23.0	23.5	25.0	23.0	24.0
13	20.0	18.5	19.5	28.0	26.0	27.0	24.5	23.0	24.0	25.0	23.5	24.5
14	19.0	17.5	18.0	27.5	26.0	26.5	24.5	23.0	24.0	25.5	24.0	25.0
15	18.0	17.0	17.5	27.0	25.0	26.0	25.0	23.5	24.0	25.5	24.5	25.0
16	19.5	18.0	19.0	27.5	26.0	26.5	25.5	24.5	25.0	25.5	24.5	25.0
17	20.5	19.5	20.0	28.5	26.5	27.5	26.0	25.0	25.5	25.0	23.5	24.0
18	21.5	20.0	20.5	29.0	27.0	28.0	26.0	24.5	25.5	23.5	22.0	22.5
19	22.0	20.5	21.0	29.0	27.5	28.5	26.0	24.5	25.0	22.5	21.0	22.0
20	22.5	21.5	22.0	28.0	27.0	27.5	26.0	24.5	25.5	22.5	21.0	21.5
21	23.0	21.5	22.0	28.0	26.5	27.0	25.5	24.5	25.0	22.0	21.0	21.5
22	23.5	21.5	22.5	28.0	26.0	27.0	24.5	23.5	24.0	21.5	20.0	20.5
23	23.0	21.5	22.5	27.5	27.0	27.0	23.5	23.0	23.5	20.0	19.0	19.5
24	23.0	21.5	22.5	28.0	26.0	27.0	24.5	23.0	23.5	19.5	18.0	18.5
25	24.0	22.0	23.0	28.0	26.5	27.0	25.5	24.5	25.0	19.5	18.0	19.0
26	25.0	23.0	24.0	28.0	26.5	27.0	25.5	24.0	25.0	19.5	19.0	19.0
27	25.5	23.5	24.5	27.5	26.5	27.5	24.5	23.5	24.0	19.0	18.5	19.0
28	26.5	24.5	25.5	27.5	26.5	27.0	23.5	23.0	23.0	19.5	19.0	19.0
29	26.5	25.5	26.0	26.5	25.5	26.0	23.0	21.5	22.5	19.5	18.5	19.0
30	26.5	25.0	25.5	26.5	25.0	25.5	22.0	21.0	21.5	19.5	19.0	19.5
31	---	---	---	25.5	24.0	25.0	23.0	21.0	22.0	---	---	---
MONTH	26.5	17.0	21.5	29.0	22.5	26.0	27.5	21.0	24.5	25.5	18.0	22.5
YEAR	29.0	.0	13.5									

01638480 CATOCTIN CREEK AT TAYLORSTOWN, VA

LOCATION.--Lat 39°15'16", long 77°34'36", Loudoun County, Hydrologic Unit 02070008, on right bank at upstream side of bridge on State Highway 663 at Taylorstown and 3.2 mi (5.1 km) downstream from Milltown Creek.

DRAINAGE AREA.--89.6 mi^2 (232.1 km^2).

PERIOD OF RECORD.--August 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 249.15 ft (75.941 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 106 ft^3/s (3.002 m^3/s), 16.07 in/yr (408 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft^3/s (674 m^3/s) June 22, 1972, gage height, 23.83 ft (7.263 m), from floodmarks, from rating curve extended above 7,400 ft^3/s (210 m^3/s) on basis of contracted-opening measurement of peak flow; minimum daily, 1.9 ft^3/s (0.054 m^3/s) Sept. 14-17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft^3/s (34 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 1	1300	1600	45.3	5.53	1.686
Feb. 3	1600	1980	56.1	6.36	1.939
June 5	1530	1560	44.2	5.44	1.658
June 13	1400	2580	73.1	7.59	2.313
June 17	0100	*3000	85.0	8.45	2.576

Minimum discharge, 2.8 ft^3/s (0.079 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	8.8	8.8	30	962	84	98	83	57	65	27	7.2
2	3.7	8.2	13	48	758	80	73	76	242	56	37	12
3	3.2	6.0	16	33	1310	75	89	67	80	73	52	17
4	3.4	6.5	13	150	620	67	108	61	292	110	27	12
5	4.0	7.6	11	92	252	66	75	56	794	65	23	8.2
6	3.7	9.9	9.9	51	147	60	81	52	396	57	21	7.2
7	4.0	12	8.8	42	100	105	75	51	205	51	24	5.5
8	3.7	11	8.8	34	84	164	65	50	154	47	21	5.5
9	3.7	9.3	8.2	25	93	121	73	53	125	46	23	6.6
10	4.0	8.2	7.6	22	78	103	91	45	152	43	23	7.7
11	4.3	7.6	7.6	20	69	94	75	41	141	42	19	7.2
12	4.6	8.8	7.1	18	65	108	67	38	110	42	22	6.0
13	4.6	7.6	6.5	17	62	103	64	35	1280	36	20	5.5
14	5.4	7.1	7.6	16	55	91	61	33	521	34	17	5.2
15	6.5	7.1	20	15	62	78	56	30	265	38	15	4.9
16	7.1	7.1	30	15	94	131	53	29	514	36	14	4.9
17	7.6	7.1	23	14	195	527	56	28	1240	32	13	7.2
18	8.2	7.1	21	14	179	215	83	27	470	30	13	6.0
19	8.8	7.1	17	14	171	169	60	25	265	30	13	4.6
20	8.2	7.1	12	15	402	193	52	37	197	70	12	6.6
21	8.8	8.2	10	15	451	249	51	30	168	30	18	10
22	8.8	7.6	11	17	265	191	47	46	148	26	18	13
23	10	7.6	18	17	187	152	43	46	135	45	14	18
24	13	7.1	51	16	158	135	42	43	114	32	14	12
25	15	7.1	36	15	134	125	41	38	101	26	13	8.8
26	16	7.6	26	15	107	125	94	34	93	23	11	9.4
27	37	8.2	25	14	100	107	154	32	84	22	8.8	142
28	67	8.2	20	14	91	91	185	94	80	23	8.8	38
29	24	8.2	20	15	---	86	108	304	75	24	8.8	19
30	15	8.2	16	16	---	81	91	98	76	23	7.7	14
31	11	---	15	25	---	84	---	66	---	32	7.2	---
TOTAL	327.3	239.2	504.9	864	7251	4060	2311	1748	8574	1309	565.3	431.2
MEAN	10.6	7.97	16.3	27.9	259	131	77.0	56.4	286	42.2	18.2	14.4
MAX	67	12	51	150	1310	527	185	304	1280	110	52	142
MIN	3.0	6.0	6.5	14	55	60	41	25	57	22	7.2	4.6
CFSM	.12	.09	.18	.31	2.89	1.46	.86	.63	3.19	.47	.20	.16
IN.	.14	.10	.21	.36	3.01	1.69	.96	.73	3.56	.54	.23	.18

CAL YR 1981 TOTAL 12531.4 MEAN 34.3 MAX 438 MIN 2.5 CFSM .38 IN 5.20
WTR YR 1982 TOTAL 28184.9 MEAN 77.2 MAX 1310 MIN 3.0 CFSM .86 IN 11.70

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'25", long 77°32'35", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi (0.5 km) downstream from Catoctin Creek (Virginia), 6 mi (9.7 km) upstream from Monocacy River, and at mile 159.5 (256.6 km).

DRAINAGE AREA.--9,651 mi^2 (24,996 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1895 to current year.

REVISED RECORDS.--WSP 192: 1895-1905. WSP 1432: 1899, 1901-2, 1904-5, 1912, 1914(M), 1915, 1917(M), 1918, 1919(M), 1920, 1921-23(M), 1924, 1925-28(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 200.63 ft (61.152 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft (0.317 m) higher.

REMARKS.--Records good except those for January, which are fair. Low flow affected slightly since 1913 by Stony River Reservoir, since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Reservoir. Low flow affected extensively at times by run-of-the-river hydroelectric plants. Gage-height telemeter at station.

AVERAGE DISCHARGE.--87 years, 9,350 ft^3/s (264.8 m^3/s), 13.16 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft^3/s (13,600 m^3/s) Mar. 19, 1936, gage height, 41.03 ft (12.506 m), from rating curve extended above 300,000 ft^3/s (8,500 m^3/s) on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow; minimum, 530 ft^3/s (15.0 m^3/s) Sept. 11, 12, 1966, gage height, 0.27 ft (0.082 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft (12.25 m), from floodmarks, discharge, about 460,000 ft^3/s (13,000 m^3/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft^3/s (990 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 4	Unknown	Unknown		Ice Jam		Mar. 18	1330	61400	1740	12.74	3.883
Feb. 5	Unknown	Unknown		Ice Jam		Mar. 22	1400	69600	1970	13.85	4.221
Feb. 19	1630	39900	1130	9.48	2.890	June 15	0230	*92000	2610	16.66	5.078
Feb. 22	1600	41000	1160	9.67	2.947						

Minimum discharge, 1,170 ft^3/s (33.1 m^3/s) Oct. 17, 20, gage height, 0.70 ft (0.213 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1390	7090	2020	4710	5600	15000	11000	12000	7040	5030	4600	2080
2	1490	5550	2560	4650	8500	13900	10400	10700	6940	4780	4020	1960
3	1420	4590	3010	5020	17000	13300	10000	9690	7230	4750	4070	2070
4	1430	4080	3710	6280	37000	12600	12100	8830	7360	5260	3980	1960
5	1380	3640	4100	12500	47000	12100	17600	8060	10300	5330	3580	1970
6	1380	3380	4140	20600	37000	11400	15500	7360	16600	6870	3490	1960
7	1390	3220	3800	21000	25200	11400	14500	6820	23500	6280	3480	1950
8	1350	3290	3520	16200	18600	12300	13700	6440	19100	5790	3670	1880
9	1340	3290	3330	13500	15000	15100	12800	6220	14800	5450	5150	1760
10	1320	3150	3210	10000	13100	17300	12200	6560	12200	5430	5000	1710
11	1290	3120	3470	6000	12600	17000	12000	6810	10800	5210	5970	1840
12	1300	3120	3630	4300	12500	17100	12100	6040	12600	6170	4940	1940
13	1260	2970	3420	4000	11200	24600	11300	5550	21300	6740	4540	1860
14	1240	2850	3290	4000	10000	32600	10700	5140	53900	7080	4090	1570
15	1270	2750	3280	4100	8990	30100	9890	4860	76400	6060	3740	1560
16	1240	2600	3390	4400	8670	25900	9210	4600	41500	5110	3290	1650
17	1190	2500	3340	3800	13100	30000	8680	4310	33000	4530	3200	1790
18	1270	2400	3340	4300	32700	57100	8850	4210	28800	5030	3710	1750
19	1270	2300	3260	4500	39000	47500	9120	3980	21500	4620	3810	1600
20	1220	2400	2990	4800	35200	35300	9000	3920	16400	4490	3360	1630
21	1250	2310	2590	4500	34900	36200	8590	3780	13200	4740	3320	1630
22	1280	2170	2360	4300	40200	65600	8020	3690	11300	5390	2870	1590
23	1240	2130	2390	4000	37200	52400	7470	3880	9780	5850	2690	1770
24	1300	2120	3240	3800	32100	35800	6960	4280	8520	5270	2580	1670
25	1380	2070	4120	3500	29700	27300	6550	4470	7680	5540	2670	1550
26	1480	2070	8980	3400	24700	22100	6760	6000	7030	6520	2530	1740
27	2050	2050	8290	3300	20600	19000	7430	6330	6370	5050	2230	2560
28	3750	2000	7210	3100	17200	16700	9040	6480	5890	5050	2230	2700
29	14400	1960	6650	3200	---	14400	12100	7170	5500	4460	2180	2770
30	15000	1950	5720	3300	---	12800	13200	10100	5190	4680	2160	2340
31	9600	---	5030	3700	---	11600	---	8310	---	5500	2140	---
TOTAL	79170	89120	123390	198760	644560	765500	316770	196590	521730	168060	109290	56810
MEAN	2554	2971	3980	6412	23020	24690	10560	6342	17390	5421	3525	1894
MAX	15000	7090	8980	21000	47000	65600	17600	12000	76400	7080	5970	2770
MIN	1190	1950	2020	3100	5600	11400	6550	3690	5190	4460	2140	1550
CFSM	.27	.31	.41	.66	2.39	2.56	1.09	.66	1.80	.56	.37	.20
IN.	.31	.34	.48	.77	2.48	2.95	1.22	.76	2.01	.65	.42	.22

CAL YR 1981 TOTAL 2004490 MEAN 5492 MAX 40400 MIN 1180 CFSM .57 IN 7.73
WTR YR 1982 TOTAL 3269750 MEAN 8958 MAX 76400 MIN 1190 CFSM .93 IN 12.60

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1960 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1960 to current year.

REMARKS.--Water temperatures are measured daily in field at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 33.5°C Aug. 24, 1964, July 19, 1977; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,350 mg/L Apr. 3, 1970; minimum daily mean, 1 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 689,000 tons (625,000 tonnes) June 23, 1972; minimum daily, 2.0 tons (1.8 tonnes) on many days during 1964, 1966-69.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 29.0°C July 18; minimum daily, 0.0°C Jan. 16.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 648 mg/L June 15; minimum daily mean, 1 mg/L Oct. 24, 25, Nov. 11-22, 27-30.
SEDIMENT LOADS: Maximum daily, 143,000 tons (130,000 tonnes) June 15; minimum daily, 3.5 tons (3.2 tonnes) Oct. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV 20...	1300	2400	470	8.8	10.0	4	150	54	46	9.6	22
APR 19...	1315	9160	265	8.9	15.0	<1	110	33	33	7.4	8.0

< Actual value is known to be less than the value shown.

DATE	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)
NOV 20...	23	.8	2.2	100	58	16	.1	.1	242	214	.33
APR 19...	13	.3	1.5	80	35	8.5	<.1	1.5	160	143	.22

< Actual value is known to be less than the value shown.

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS TOTAL (MG/L AS PO4)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV 20...	1570	.88	.050	.15	150	130	18	20	10	7
APR 19...	3960	1.1	.040	.12	170	140	31	20	10	7

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TRITIUM IN WATER MOLECULES (TU)	TRITIUM WATER MOLECULES COUNT ERROR (TU)
OCT		
01-16	34.7	1.9
17-20	33.8	1.3
21-31	30.5	1.2
NOV		
01-07	30.5	1.2
10-29	33.3	1.5
30-30	10.0	.5
DEC		
01-17	10.0	.5
18-31	32.7	1.5
JAN		
01-07	32.7	1.5
08-16	33.7	1.5
FEB		
04-22	29.7	1.4
MAR		
01-18	35.6	1.5
18-31	33.8	1.5
APR		
01-17	33.1	1.4
18-30	24.1	1.2
MAY		
01-17	33.0	1.6
18-31	34.4	1.6
JUN		
01-15	32.3	1.5
16-30	36.2	1.7
JUL		
01-18	32.8	1.5
19-31	31.7	1.6
AUG		
02-17	32.8	1.8
19-31	35.7	1.9
SEP		
01-15	31.4	1.8
16-30	29.8	1.6

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM
MAR							
18...	1720	60200	692	112000	37	47	59
22...	0920	67400	313	57000	38	47	57
22...	1610	69500	392	73600	39	52	60

DATE	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAR						
18...	71	83	93	98	100	--
22...	66	74	88	96	99	100
22...	70	79	90	97	100	--

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	12.0	3.0	2.0	---	4.0	9.0	14.0	22.0	22.0	26.0	23.0
2	17.0	11.0	6.0	1.0	---	4.0	10.0	17.0	22.0	23.0	24.0	25.0
3	13.0	12.0	4.0	1.5	---	4.0	10.0	15.0	23.0	23.0	24.0	25.0
4	15.0	11.0	5.0	2.0	---	3.0	10.0	16.0	20.0	22.0	25.0	22.0
5	15.0	11.0	4.0	2.0	1.0	5.0	9.0	16.0	19.0	22.0	26.0	20.0
6	17.0	12.0	4.0	2.0	1.0	5.0	7.0	16.0	19.0	22.0	26.0	21.0
7	14.0	9.0	4.0	3.0	1.0	4.0	6.0	19.0	17.0	23.0	25.0	22.0
8	13.0	11.0	5.0	2.0	2.0	3.0	5.0	18.0	17.0	24.0	26.0	22.0
9	11.0	9.0	4.0	2.0	1.0	3.0	6.0	19.0	18.0	24.0	25.0	21.0
10	12.0	9.0	2.0	2.0	1.0	3.0	6.0	17.0	19.0	25.0	25.0	21.0
11	14.0	8.0	2.0	2.0	1.0	4.0	8.0	17.0	19.0	25.0	24.0	22.0
12	12.0	8.0	3.0	1.0	1.0	6.0	8.0	18.0	19.0	25.0	23.0	22.0
13	12.0	7.0	3.0	1.0	2.0	7.0	8.0	19.0	18.0	25.0	22.0	22.0
14	12.0	7.0	2.0	1.0	2.0	8.0	9.0	20.0	19.0	25.0	23.0	23.0
15	12.0	7.0	2.0	1.0	4.0	7.0	10.0	23.0	18.0	26.0	24.0	23.0
16	15.0	8.0	2.0	.0	4.0	7.0	12.0	23.0	19.0	27.0	23.0	23.0
17	12.0	8.0	1.0	---	3.0	7.0	14.0	21.0	19.0	28.0	25.0	21.0
18	13.0	8.0	3.0	---	2.0	7.0	15.0	22.0	20.0	29.0	24.0	21.0
19	10.0	7.0	1.0	---	2.0	7.0	14.0	23.0	22.0	27.0	23.0	22.0
20	9.0	8.0	1.0	---	3.0	8.0	14.0	22.0	20.0	27.0	25.0	20.0
21	9.0	6.0	2.0	---	4.0	8.0	14.0	22.0	20.0	26.0	24.0	20.0
22	12.0	5.0	2.0	---	5.0	8.0	13.0	22.0	20.0	25.0	22.0	19.0
23	13.0	4.0	2.0	---	5.0	8.0	13.0	19.0	20.0	27.0	23.0	17.0
24	10.0	4.0	2.0	---	5.0	8.0	14.0	18.0	20.0	26.0	23.0	19.0
25	9.0	4.0	2.0	---	4.0	10.0	17.0	19.0	20.0	26.0	24.0	17.0
26	9.0	4.0	1.0	---	3.0	8.0	15.0	20.0	---	27.0	21.0	18.0
27	13.0	4.0	2.0	---	4.0	7.0	15.0	20.0	---	27.0	22.0	18.0
28	13.0	4.0	2.0	---	4.0	8.0	14.0	20.0	---	26.0	21.0	18.0
29	11.0	5.0	2.0	---	---	7.0	14.0	21.0	---	24.0	19.0	17.0
30	11.0	3.0	1.0	---	---	8.0	14.0	23.0	25.0	24.0	20.0	---
31	11.0	---	1.0	---	---	9.0	---	22.0	---	25.0	20.0	---
MEAN	12.5	7.5	2.5	1.5	2.5	6.5	11.0	19.5	20.0	25.0	23.5	21.0

WTR YR 1982 MEAN 13.5 MAX 29.0 MIN .0

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	3	11	23	440	2	11	9	114	15	230	16	648
2	3	12	16	240	8	55	9	113	20	460	10	375
3	4	15	14	174	9	73	10	136	40	1850	10	359
4	5	19	9	99	12	120	12	203	100	10000	11	374
5	8	30	8	79	11	122	35	1180	300	38000	12	392
6	6	22	6	55	12	134	87	4840	260	26000	11	339
7	5	19	5	43	9	92	84	4760	165	11200	9	277
8	5	18	3	27	12	114	47	2060	78	3920	10	332
9	6	22	3	27	15	135	26	948	41	1660	14	571
10	6	21	2	17	12	104	15	405	24	849	18	841
11	5	17	1	8.4	10	94	10	162	18	612	18	826
12	4	14	1	8.4	10	98	9	104	12	405	22	1020
13	3	10	1	8.0	10	92	9	97	11	333	52	3580
14	3	10	1	7.7	10	89	9	97	10	270	121	10700
15	5	17	1	7.4	10	89	9	100	9	218	121	9830
16	3	10	1	7.0	10	92	8	95	10	234	86	6010
17	3	9.6	1	6.8	9	81	60	616	38	1740	78	6610
18	3	10	1	6.5	11	99	40	464	210	19600	581	91300
19	4	14	1	6.2	10	88	30	364	285	30000	465	61300
20	3	9.9	1	6.5	10	81	20	259	150	14300	150	14300
21	2	6.8	1	6.2	10	70	15	182	97	9140	97	9660
22	2	6.9	1	5.9	9	57	10	116	125	13600	336	60600
23	2	6.7	2	12	8	52	10	108	112	11200	384	57400
24	1	3.5	2	11	9	79	10	103	75	6500	155	15000
25	1	3.7	2	11	12	133	10	94	64	5130	75	5530
26	2	8.0	2	11	22	533	9	83	45	3000	49	2920
27	3	17	1	5.5	19	425	9	80	29	1610	37	1900
28	13	132	1	5.4	32	623	9	75	20	929	24	1080
29	72	2800	1	5.3	23	413	8	69	---	---	18	700
30	75	3040	1	5.3	13	201	8	71	---	---	19	657
31	42	1090	---	---	10	136	8	80	---	---	19	595
TOTAL	---	7425.1	---	1352.5	---	4585	---	18178	---	212990	---	366026
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17	505	14	454	35	665	12	163	18	224	8	45
2	17	477	11	318	46	862	10	129	18	195	8	42
3	16	432	11	288	38	742	15	192	20	220	9	50
4	25	817	10	238	33	656	17	241	21	226	9	48
5	50	2380	8	174	51	1420	21	302	22	213	11	59
6	42	1760	8	159	72	3230	22	408	22	207	13	69
7	34	1330	7	129	122	7740	17	288	21	197	9	47
8	25	925	8	139	80	4130	16	250	16	159	8	41
9	15	518	9	151	55	2200	25	368	33	459	11	52
10	11	362	10	177	38	1250	27	396	30	405	12	55
11	10	324	13	239	35	1020	30	422	33	532	12	60
12	11	359	11	179	40	1360	32	533	27	360	12	63
13	10	305	8	120	100	5750	30	546	24	294	10	50
14	9	260	9	125	505	87600	32	612	21	232	9	38
15	8	214	11	144	648	143000	30	491	22	222	10	42
16	8	199	13	161	210	23500	30	414	21	187	10	45
17	7	164	14	163	160	14300	17	208	17	147	11	53
18	7	167	13	148	155	12100	18	244	17	170	9	43
19	7	172	13	140	85	4930	19	237	17	175	6	26
20	8	194	13	138	61	2700	20	242	16	145	8	35
21	13	302	11	112	42	1500	25	320	13	117	9	40
22	11	238	11	110	31	946	26	378	11	85	9	39
23	11	222	13	136	26	687	29	458	9	65	9	43
24	12	226	14	162	22	506	29	413	8	56	6	27
25	12	212	18	217	17	353	26	389	10	72	6	25
26	13	237	24	389	15	285	34	599	11	75	7	33
27	14	281	24	410	13	224	30	409	9	54	9	62
28	17	415	25	437	11	175	37	504	10	60	7	51
29	22	719	24	465	11	163	26	313	10	59	10	75
30	22	784	42	1150	10	140	26	329	9	52	10	63
31	---	---	35	785	---	---	28	416	9	52	---	---
TOTAL	---	15500	---	8157	---	324134	---	11214	---	5716	---	1421

TOTAL LOAD FOR YEAR: 976698.6 TONS.

01643700 GOOSE CREEK NEAR MIDDLEBURG, VA

LOCATION.--Lat 38°59'11", long 77°47'49", Loudoun County, Hydrologic Unit 02070008, on right bank 250 ft (76 m) upstream from bridge on State Highway 611, 2.0 mi (3.2 km) downstream from Panther Skin Creek, and 3.4 mi (5.5 km) northwest of Middleburg.

DRAINAGE AREA.--123 mi² (319 km²).

PERIOD OF RECORD.--October 1965 to September 1967, July 1969 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 329.80 ft (100.523 m) National Geodetic Vertical Datum of 1929. October 1965 to September 1967, at site 300 ft (91 m) downstream at datum 0.73 ft (0.223 m) lower.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 136 ft³/s (3.852 m³/s), 15.02 in/yr (382 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s (544 m³/s) June 22, 1972, gage height, 27.46 ft (8.370 m), from floodmarks, from rating curve extended above 2,900 ft³/s (82 m³/s) on basis of slope-area measurements at gage heights 14.44 ft (4.401 m) and 27.46 ft (8.370 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 1-4, 8-12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,350 ft³/s (38 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 1	1030	1490	42.2	7.32	2.231
Feb. 3	1630	1680	47.6	7.80	2.377
June 5	1400	1650	46.7	7.72	2.353
June 13	1600	*2700	76.5	10.19	3.106

Minimum discharge, 2.8 ft³/s (0.079 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	27	11	56	895	164	169	135	115	90	34	8.3
2	4.8	23	20	75	432	155	133	122	114	80	24	10
3	4.3	21	21	53	1320	144	175	112	100	80	21	28
4	4.0	19	17	128	518	135	162	102	205	93	19	15
5	4.0	19	15	121	324	130	132	93	866	76	82	8.8
6	4.3	31	13	87	242	122	144	87	630	68	249	6.0
7	5.1	29	12	75	185	201	121	83	432	59	112	5.4
8	5.1	21	11	58	160	218	116	82	321	57	66	6.0
9	4.8	18	11	43	257	192	130	87	252	73	65	6.0
10	5.1	16	8.8	40	216	180	128	71	343	115	92	8.8
11	5.1	15	7.1	37	160	173	115	64	260	94	53	9.4
12	6.0	15	6.6	32	143	229	108	61	213	64	47	8.3
13	5.4	14	6.2	29	138	203	106	57	1320	50	39	6.6
14	6.0	12	7.2	27	124	187	102	54	870	61	32	5.4
15	4.8	12	32	26	127	178	96	51	550	79	29	5.1
16	4.6	12	44	25	146	322	93	47	405	52	25	5.1
17	5.4	12	32	24	332	493	94	45	541	45	32	5.7
18	5.4	12	27	24	346	357	121	42	363	40	26	5.4
19	6.0	12	28	25	355	307	94	40	268	35	21	4.6
20	7.7	12	19	25	505	415	89	42	221	37	18	4.8
21	7.1	12	14	26	521	461	89	90	185	36	18	6.0
22	7.1	11	15	28	423	380	82	147	164	31	19	11
23	6.6	10	25	27	346	324	76	87	162	34	15	19
24	15	10	57	26	296	282	75	76	136	41	18	15
25	8.8	11	46	26	247	242	73	73	127	31	17	11
26	12	12	36	26	205	216	193	64	121	25	12	11
27	112	12	34	25	190	182	205	58	114	21	10	92
28	181	12	30	24	180	160	208	127	106	20	11	25
29	64	11	29	24	---	151	162	439	103	23	11	11
30	40	9.4	23	26	---	144	146	182	109	24	8.3	7.1
31	32	---	22	56	---	150	---	138	---	44	7.7	---
TOTAL	586.6	462.4	679.9	1324	9333	7197	3737	2958	9716	1678	1233.0	370.8
MEAN	18.9	15.4	21.9	42.7	333	232	125	95.4	324	54.1	39.8	12.4
MAX	181	31	57	128	1320	493	208	439	1320	115	249	92
MIN	3.1	9.4	6.2	24	124	122	73	40	100	20	7.7	4.6
CFSM	.15	.13	.18	.35	2.71	1.89	1.02	.78	2.63	.44	.32	.10
IN.	.18	.14	.21	.40	2.82	2.18	1.13	.89	2.94	.51	.37	.11

CAL YR 1981 TOTAL 13706.4 MEAN 37.6 MAX 413 MIN 2.2 CFSM .31 IN 4.15
WTR YR 1982 TOTAL 39275.7 MEAN 108 MAX 1320 MIN 3.1 CFSM .88 IN 11.88

01644000 GOOSE CREEK NEAR LEESBURG, VA

LOCATION.--Lat 39°01'10", long 77°34'40", Loudoun County, Hydrologic Unit 02070008, on left bank 400 ft (120 m) upstream from bridge on State Highway 621 at Evergreen Mills, 1.4 mi (2.3 km) downstream from Little River, 6.7 mi (10.8 km) south of Leesburg, and 10.9 mi (17.5 km) upstream from mouth.

DRAINAGE AREA.--332 mi^2 (860 km^2).

PERIOD OF RECORD.--July 1909 to April 1911, September 1911 to December 1912, January 1930 to current year.

REVISED RECORDS.--WSP 851: 1935-37. WSP 951: 1933(M), 1937. WSP 1302: 1934-35(M). WSP 2103: Drainage area. WDR VA-72-1: 1937(M), 1943(M), 1951(M), 1956(M). WRD VA-79-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 248.93 ft (75.874 m) National Geodetic Vertical Datum of 1929. July 12, 1909, to Dec. 31, 1912, nonrecording gage at site 1,000 ft (300 m) downstream at different datum. Jan. 21, 1930, to Nov. 28, 1938, nonrecording gage at site 400 ft (120 m) downstream at datum 4.20 ft (1.280 m) lower than present datum.

REMARKS.--Records good except those for period of no gage-height record, Apr. 9 to May 26, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years (water years 1910, 1912, 1931-82), 313 ft^3/s (8.864 m^3/s), 12.80 in/yr (325 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,100 ft^3/s (2,210 m^3/s) June 22, 1972, gage height, 30.59 ft (9.324 m), from high-water mark in gage house, from rating curve extended above 11,000 ft^3/s (310 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.40 ft^3/s (0.011 m^3/s) Sept. 27-30, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1889 reached a stage of about 29 ft (8.8 m), discharge, about 45,000 ft^3/s (1,300 m^3/s), site and datum in use 1930-38, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft^3/s (110 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 1	1600	4920	139	7.98	2.432	June 5	1900	4100	116	6.76	2.060
Feb. 3	1700	6600	187	10.16	3.097	June 13	2130	*6640	188	10.21	3.112

Minimum discharge, 14 ft^3/s (0.40 m^3/s) Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	56	50	184	2550	366	412	370	391	214	99	20
2	29	49	68	265	2770	342	317	330	485	187	72	45
3	27	45	81	197	5000	317	337	310	390	181	59	123
4	26	41	75	413	2010	289	462	280	902	234	54	52
5	26	39	68	458	869	279	326	260	2570	199	95	32
6	26	46	62	307	576	255	330	240	1720	176	690	23
7	26	57	59	255	432	341	317	230	1030	159	375	19
8	27	52	59	212	362	570	277	230	722	154	158	18
9	29	42	56	165	530	434	310	240	563	195	123	18
10	28	39	53	120	564	387	310	210	719	168	145	21
11	27	38	50	105	386	368	290	175	633	235	109	21
12	29	36	47	90	329	447	280	165	493	168	90	21
13	30	36	42	80	310	419	270	160	3600	142	81	20
14	29	35	52	74	273	388	265	150	2620	136	64	18
15	28	40	97	70	283	351	269	140	1280	195	54	17
16	30	45	140	68	331	562	269	130	945	150	50	23
17	34	46	120	66	732	1700	272	120	1250	127	45	21
18	32	45	109	66	876	906	313	115	956	111	54	16
19	32	45	75	66	861	704	270	110	632	116	49	14
20	35	49	70	70	1460	855	250	110	514	139	41	18
21	35	50	64	76	1460	1080	240	250	443	106	38	22
22	38	47	66	80	1040	879	220	380	391	88	39	39
23	44	46	102	76	777	689	210	250	377	83	36	50
24	54	46	150	74	641	594	210	210	331	96	35	40
25	79	49	158	70	540	528	200	205	300	86	34	33
26	69	49	130	68	447	487	335	204	287	70	32	33
27	147	50	120	66	410	426	611	188	264	60	29	303
28	379	52	102	66	387	373	698	371	251	56	26	132
29	175	49	95	68	---	351	550	1190	235	56	25	59
30	104	47	77	72	---	331	430	659	238	70	25	41
31	71	---	64	128	---	331	---	455	---	124	22	---
TOTAL	1771	1366	2561	4175	27206	16349	9850	8437	25532	4281	2848	1312
MEAN	57.1	45.5	82.6	135	972	527	328	272	851	138	91.9	43.7
MAX	379	57	158	458	5000	1700	698	1190	3600	235	690	303
MIN	26	35	42	66	273	255	200	110	235	56	22	14
CFSM	.17	.14	.25	.41	2.93	1.59	.99	.82	2.56	.42	.28	.13
IN.	.20	.15	.29	.47	3.05	1.83	1.10	.95	2.86	.48	.32	.15

CAL YR 1981 TOTAL 41601.5 MEAN 114 MAX 1630 MIN 4.9 CFSM .34 IN 4.66
WTR YR 1982 TOTAL 105688.0 MEAN 290 MAX 5000 MIN 14 CFSM .87 IN 11.84

01644291 STAVE RUN NEAR RESTON, VA

LOCATION.--Lat 38°56'56", long 77°22'16", Fairfax County, Hydrologic Unit 02070008, on left bank 450 ft (137 m) downstream from the western boundary line of the U.S. Geological Survey National Center property, 0.31 mi (0.50 km) upstream from mouth, and 1.4 mi (2.3 km) southwest of Sunset Hills in Reston.

DRAINAGE AREA.--0.08 mi² (0.21 km²).

PERIOD OF RECORD.--October 1971 to April 1982 (discontinued).

REVISED RECORDS.--WDR VA-79-1: 1974.

GAGE.--Water-stage recorder, trapezoidal flume, and crest-stage gage. Datum of gage is 367.25 ft (111.738 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 16 to Feb. 1, which are poor.

AVERAGE DISCHARGE.--10 years, 0.12 ft³/s (0.003 m³/s), 20.37 in/yr (517 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 281 ft³/s (7.96 m³/s) Aug. 13, 1978, gage height, 3.43 ft (1.045 m), from rating curve extended above 67 ft³/s (1.90 m³/s) on basis of flow-over-embankment measurement at gage height 2.84 ft (0.866 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1981 to April 1982, 34 ft³/s (0.96 m³/s) Mar. 31, gage-height, 1.62 ft (0.494 m), may have been higher during period of no gage-height record, Jan. 16 to Feb. 1; maximum daily, 1.4 ft³/s (0.040 m³/s) Feb. 3; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1981 TO APRIL 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.00	.12	.26	.10	.00	.05					
2	.00	.00	.03	.00	.45	.00	.03					
3	.00	.00	.00	.04	1.4	.00	.25					
4	.00	.00	.00	.53	.15	.00	.03					
5	.00	.00	.00	.01	.02	.00	.01					
6	.01	.03	.00	.00	.00	.00	.16					
7	.01	.00	.00	.00	.00	.61	.02					
8	.00	.00	.00	.00	.00	.06	.00					
9	.00	.00	.00	.00	.42	.02	.15					
10	.00	.00	.00	.00	.02	.01	.02					
11	.00	.00	.00	.00	.01	.07	.01					
12	.00	.00	.00	.00	.00	.40	.00					
13	.00	.00	.00	.28	.02	.06	.00					
14	.00	.00	.42	.07	.01	.03	.00					
15	.00	.00	.16	.00	.00	.04	.00					
16	.00	.00	.07	.00	.08	.66	.00					
17	.00	.00	.01	.00	.67	.09	.00					
18	.00	.00	.00	.00	.15	.03	---					
19	.00	.00	.00	.03	.61	.03	---					
20	.00	.00	.00	.58	.12	.21	---					
21	.00	.00	.00	.30	.05	.11	---					
22	.00	.00	.06	.90	.03	.03	---					
23	.29	.00	.14	.28	.02	.02	---					
24	.02	.00	.01	.08	.01	.00	---					
25	.11	.00	.00	.02	.00	.00	---					
26	.56	.00	.00	.00	.00	.06	---					
27	.73	.00	.00	.00	.00	.01	---					
28	.03	.00	.00	.00	.01	.00	---					
29	.00	.00	.00	.00	---	.00	---					
30	.00	.00	.00	.00	---	.00	---					
31	.00	---	.11	.00	---	.39	---					
TOTAL	1.79	.03	1.13	3.38	4.35	2.94	---	---	---	---	---	---
MEAN	.058	.001	.036	.11	.16	.095	---	---	---	---	---	---
MAX	.73	.03	.42	.90	1.4	.66	---	---	---	---	---	---
MIN	.00	.00	.00	.00	.00	.00	---	---	---	---	---	---
CFSM	.73	.01	.45	1.38	2.00	1.19	---	---	---	---	---	---
IN.	.82	.01	.52	1.55	2.00	1.35	---	---	---	---	---	---

CAL YR 1981 TOTAL 21.35 MEAN .058 MAX 1.7 MIN .00 CFSM .73 IN 9.81

01646000 DIFFICULT RUN NEAR GREAT FALLS, VA

LOCATION.--Lat 38°58'33", long 77°14'46", Fairfax County, Hydrologic Unit 02070008, on right bank 250 ft (76 m) downstream from bridge on State Highway 193, 300 ft (91 m) downstream from Rocky Run, 0.7 mi (1.1 km) upstream from mouth, and 1.5 mi (2.4 km) southeast of Great Falls.

DRAINAGE AREA.--57.9 mi² (150.0 km²).

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge only October to December 1934, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M), 1937-38, 1939-40(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 151.30 ft (46.116 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Oct. 14 to Jan. 5, which are poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--48 years, 59.6 ft³/s (1.688 m³/s) 13.98 in/yr (355 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s (912 m³/s) June 22, 1972, gage height, 21.40 ft (6.523 m), from floodmarks, from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of contracted-opening measurement at gage height 13.18 ft (4.017 m) and slope-area measurement at gage height 21.40 ft (6.523 m); minimum, 0.05 ft³/s (0.001 m³/s) Sept. 9, 10, 1966, gage height, 1.65 ft (0.503 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1730	1200	34.0	7.81	2.380	June 13	1900	*1500	42.5	8.41	2.563

Minimum discharge, 5.8 ft³/s (0.16 m³/s) Oct. 9, gage height, 2.49 ft (0.759 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	15	21	99	285	41	125	51	65	31	18	9.7
2	15	15	46	47	69	39	52	47	97	26	16	10
3	10	15	20	32	911	37	130	44	47	33	27	27
4	7.4	16	14	194	222	35	109	41	104	45	13	11
5	7.2	17	17	65	81	35	56	39	290	27	13	9.2
6	7.6	60	13	34	59	33	96	36	103	24	165	9.1
7	15	20	12	28	47	111	62	36	62	23	50	19
8	8.5	12	12	24	41	107	49	42	47	26	24	41
9	7.2	11	12	22	112	59	62	55	42	33	23	38
10	7.3	12	12	19	87	47	62	36	65	32	20	27
11	7.4	13	13	15	50	45	49	34	60	28	16	9.4
12	7.4	12	13	15	43	113	46	32	46	23	104	8.6
13	7.6	11	14	15	42	65	44	30	858	20	27	7.9
14	7.6	11	22	16	40	56	42	28	277	18	19	7.8
15	7.6	11	130	18	39	47	40	26	81	20	16	7.6
16	8.0	11	65	18	48	140	40	26	59	18	15	7.9
17	8.4	14	39	17	176	216	42	25	57	17	15	7.3
18	10	12	29	15	145	76	73	24	47	15	27	6.9
19	13	11	24	15	202	60	44	23	43	19	19	6.8
20	9.0	11	25	16	173	82	41	24	39	28	15	13
21	7.6	12	19	18	109	87	40	27	36	19	30	12
22	8.0	9.0	21	18	69	65	37	40	35	14	25	108
23	70	9.0	54	17	54	52	36	31	46	25	15	28
24	45	10	42	16	49	48	35	29	34	20	15	13
25	35	12	30	15	45	45	35	28	32	14	14	12
26	200	10	25	15	40	57	198	28	32	13	12	12
27	200	10	24	15	40	45	239	26	31	14	11	209
28	60	10	23	16	42	39	161	70	31	40	11	26
29	30	9.0	22	17	---	39	70	358	37	16	10	18
30	17	9.0	20	21	---	39	56	65	50	17	9.2	16
31	15	---	20	107	---	68	---	125	---	28	9.6	---
TOTAL	866.2	410.0	853	999	3320	2028	2171	1526	2853	726	803.8	738.2
MEAN	27.9	13.7	27.5	32.2	119	65.4	72.4	49.2	95.1	23.4	25.9	24.6
MAX	200	60	130	194	911	216	239	358	858	45	165	209
MIN	7.2	9.0	12	15	39	33	35	23	31	13	9.2	6.8
CFSM	.48	.24	.48	.56	2.06	1.13	1.25	.85	1.64	.40	.45	.43
IN.	.56	.26	.55	.64	2.13	1.30	1.39	.98	1.83	.47	.52	.47

CAL YR 1981 TOTAL 12924.7 MEAN 35.4 MAX 517 MIN 7.2 CFSM .61 IN 8.30
WTR YR 1982 TOTAL 17294.2 MEAN 47.4 MAX 911 MIN 6.8 CFSM .82 IN 11.11

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'58", long 77°07'40", Montgomery County, Md., Hydrologic Unit 02070008, on left bank just above Little Falls Dam, 1 mi (1.6 km) upstream from District of Columbia boundary line, 1.2 mi (1.9 km) upstream from Chain Bridge, 1.8 mi (2.9 km) east of Langley, Fairfax County, Va., and at mile 117.4 (188.9 km).

DRAINAGE AREA.--11,560 mi² (29,940 km²).

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WDR MD-DE-75-1: 1973-74(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 37.95 ft (11.567 m) National Geodetic Vertical Datum of 1929. Prior to June 7, 1930, nonrecording gage, and June 7, 1930, to Jan. 22, 1965, water-stage recorder, at site 1 mi (1.6 km) upstream on right bank at same datum.

REMARKS.--Records good except those for January, which are fair. Diversions at Great Falls through aqueducts, and since June 1959, from gage pool at Little Falls Dam, for municipal supply of Washington, D. C.; since October 1958, at Rockville Filtration Plant, for municipal supply of city of Rockville; since April 1961, at Potomac Filtration Plant, for water supply of Washington Suburban Sanitary District; since October 1961, at Fairfax Water Treatment Plant for water supply of city of Fairfax (from Goose Creek); and since April 1964, at Violets Lock to Chesapeake and Ohio Canal. Low flow affected slightly by Stony River Reservoir and since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Lake. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 11,390 ft³/s (322.6 m³/s), 13.38 in/yr (340 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 484,000 ft³/s (13,700 m³/s) Mar. 19, 1936, gage height, 28.1 ft (8.56 m), site then in use; minimum daily observed at gaging station, 121 ft³/s (3.43 m³/s) Sept. 9, 1966, does not include diversion of 489 ft³/s (13.8 m³/s) for municipal use; minimum daily (adjusted), 601 ft³/s (17.0 m³/s) Sept. 10, 1966, includes diversion of 449 ft³/s (12.7 m³/s) for municipal use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, was of approximately the same magnitude as that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 45,000 ft³/s (1,200 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 5	2315	64600	1830	7.41	2.259	Mar. 18	2100	68800	1950	7.60	2.316
Feb. 19	2330	51000	1440	6.75	2.057	Mar. 22	2215	76400	2160	7.93	2.417
Feb. 22	1645	50200	1420	6.71	2.045	June 15	0945	*102000	2890	8.91	2.716

Minimum daily discharge, 955 ft³/s (27.0 m³/s) Oct. 22, does not include diversion for municipal use; minimum daily (adjusted) discharge, 1,460 ft³/s (41.3 m³/s) Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1300	9060	1950	5720	6500	19100	13800	16200	9060	5920	5550	2100
2	1280	6870	2080	5610	9000	17200	12800	14600	9350	5630	4610	2000
3	1290	5390	2450	6420	17900	16300	12300	13200	8730	5280	4090	3150
4	1290	4420	2990	7300	35700	15500	13700	12100	10100	6080	3950	2170
5	1250	3870	3760	14200	45600	14600	20400	11100	13200	6300	3950	1990
6	1200	3580	3940	21400	51000	14000	19700	10100	21100	6450	3990	1950
7	1180	3200	3960	24500	33700	13800	19300	9330	28100	7720	4720	1810
8	1100	3090	3680	20800	24600	16100	18100	8630	25600	6830	3950	1790
9	1160	3310	3150	16500	20200	17500	16400	8270	19700	6460	3950	1800
10	1160	3340	3040	13400	17700	20000	15700	7840	16000	6200	5030	1730
11	1140	3190	3020	7850	15400	20500	15200	8210	14300	6110	5250	1530
12	1140	3130	3250	5120	14900	20300	15100	8040	13600	5880	6230	1570
13	1120	3050	3410	4730	14200	24300	14400	6950	27400	6690	5070	1620
14	1120	2890	3380	4700	12700	35300	13400	6250	59800	7160	4560	1690
15	1050	2830	3770	4910	11300	36500	12600	5830	92700	7220	4050	1470
16	1070	2650	3720	5180	10700	32300	11700	5410	58100	6050	3670	1330
17	1050	2550	3630	4550	13200	35200	10900	5000	42600	5000	3290	1350
18	1000	2480	3530	5130	32700	56600	10900	4620	39500	4320	3140	1480
19	1070	2400	3400	5380	46800	61100	11300	4280	29500	4700	3450	1570
20	1010	2260	2700	5810	46800	45500	11200	4340	22200	4600	3660	1490
21	967	2310	2440	5330	42400	39000	10700	4290	17700	4410	3320	1530
22	955	2190	2620	5200	48400	63300	10000	4560	14700	4570	3320	2110
23	1090	2130	2860	4760	48100	67000	9280	4940	12800	5410	2870	1990
24	1270	2090	2850	4520	40700	46100	8670	4580	11100	5690	2550	1750
25	1190	2120	3990	4220	37500	34400	8090	4820	9660	5020	2400	1770
26	1390	2060	5860	4100	31500	27600	8630	5040	8720	5650	2450	1580
27	2000	2060	9950	4000	24300	23100	11700	6630	7930	5950	2380	2660
28	2910	2060	8620	3800	21600	20300	13800	7180	7000	6700	2150	3300
29	8890	1990	7560	3900	---	17800	14600	12800	6420	5680	2120	3040
30	17300	1940	6890	4000	---	15700	16600	10800	6140	4580	2080	2990
31	13200	---	5960	4500	---	14400	---	11900	---	5170	2100	---
TOTAL	74142	94510	124410	237540	775100	900400	400970	247840	662810	179430	113900	58310
MEAN	2392	3150	4013	7663	27680	29050	13370	7995	22090	5788	3674	1944
MAX	17300	9060	9950	24500	51000	67000	20400	16200	92700	7720	6230	3300
MIN	955	1940	1950	3800	6500	13800	8090	4280	6140	4320	2080	1330
(*)	505	496	508	500	483	486	480	517	525	578	545	541
MEAN‡	2898	3647	4523	8162	28180	29540	13850	8511	22620	6366	4220	2485
CFSM‡	.25	.32	.39	.71	2.44	2.56	1.20	.74	1.96	.55	.37	.22
IN‡	.29	.35	.45	.81	2.54	2.95	1.34	.85	2.18	.64	.42	.24

CAL YR 1981 TOTAL 2330967 MEAN 6386 MAX 53400 MIN 844 MEAN‡ 6914 CFSM‡ .60 IN‡ 8.12
WTR YR 1982 TOTAL 3869362 MEAN 10600 MAX 92700 MIN 955 MEAN‡ 11120 CFSM‡ .96 IN‡ 13.06

* Diversion in cfs, for municipal supply of Washington, D. C., Washington Suburban Sanitary District, city of Rockville, city of Fairfax (from Goose Creek), and the Chesapeake and Ohio Canal (insignificant diversion to canal during current water year); records furnished by Corps of Engineers, Washington Suburban Sanitary Commission, city of Rockville, and city of Fairfax.

‡ Adjusted for diversion.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC
(National stream-quality accounting network station)

LOCATION.--Lat 38°55'46", long 77°07'02", Arlington County, Va., Hydrologic Unit 02070010, under right downstream side of bridge on Virginia State Highway 123, and at river mile 115.9 (186.5 km).

DRAINAGE AREA.--11,570 mi² (29,970 km²).

PERIOD OF RECORD.--March 1973 to current year. Prior to October 1977, published as "at Great Falls."

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)
NOV 10...	1130	3280	348	8.1	9.0	9.5	3.0	12.3	54	210	130	47
JAN 20...	1300	5940	410	8.3	2.5	.0	2.6	14.6	K2	220	120	45
MAR 16...	1030	32100	185	7.6	7.0	8.0	36	12.5	150	380	76	33
MAY 11...	1000	8250	280	8.4	19.0	19.0	3.9	9.7	70	1000	110	28
JUL 14...	1030	7050	350	8.2	26.0	29.0	5.0	8.4	26	540	140	43
SEP 21...	0945	1560	415	8.0	18.0	20.5	6.4	8.4	110	4600	150	53

K Result based on colony count outside optimal range.

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV 10...	39	8.7	15	19	.6	3.0	86	48	13	.1	4.7	195
JAN 20...	36	7.3	15	21	.6	2.0	75	36	14	.1	6.7	185
MAR 16...	22	5.1	6.1	15	.3	1.4	43	26	7.8	<.1	5.9	118
MAY 11...	32	7.0	8.7	14	.4	3.5	81	32	9.6	.2	.9	153
JUL 14...	39	9.8	12	16	.5	2.0	95	37	15	.1	1.9	249
SEP 21...	39	13	23	24	.8	2.9	98	58	26	.2	.4	233

< Actual value is known to be less than the value shown.

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS TOTAL (MG/L AS PO4)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 10...	183	.27	1730	1.3	.040	.05	.40	.040	.12	.070	.060	.18
JAN 20...	162	.25	2970	2.2	.150	.19	.40	.070	.21	.050	.050	.15
MAR 16...	100	.16	10200	--	--	--	--	--	--	--	--	--
MAY 11...	141	.21	3410	.71	.040	.05	.71	.060	.18	.020	<.010	--
JUL 14...	174	.34	4740	.83	.020	.03	.80	.070	.21	.010	<.010	--
SEP 21...	222	.32	981	.26	.050	.06	1.20	.080	.25	.020	<.010	--

< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
NOV 10...	1	0	1	100	60	36	1	<1	10	--	<10	<1
MAR 16...	1	0	1	100	60	37	3	<1	40	10	30	6
MAY 11...	1	0	1	<100	--	40	1	<1	20	10	10	3
SEP 21...	2	0	2	100	40	59	1	<1	10	--	<10	<1

< Actual value is known to be less than the value shown.

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)
NOV 10...	<1	14	10	4	310	280	27	13	--	<1	20	9
MAR 16...	<1	12	10	2	2000	2000	45	16	15	1	180	170
MAY 11...	<1	4	1	3	420	--	<3	7	5	2	50	50
SEP 21...	<1	15	9	6	390	380	7	8	6	2	80	80

< Actual value is known to be less than the value shown.

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)
NOV 10...	11	<.1	--	<.1	4	3	1	<1	<1	<1	<1
MAR 16...	6	.1	--	<.1	120	120	2	<1	<1	<1	<1
MAY 11...	3	.2	.1	.1	5	0	5	<1	<1	<1	<1
SEP 21...	2	.2	.0	.2	6	4	2	<1	<1	<1	<1

< Actual value is known to be less than the value shown.

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
NOV 10...	40	<4	<4.8	<.4	--	<.4	3.4	<.4	3.3	.07	.24
MAR 16...	40	<4	--	--	--	--	--	--	--	--	--
MAY 11...	10	<3	<3.5	1.1	.7	<.6	<2.0	<.5	<2.0	.39	.13
SEP 21...	20	<4	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV			
10...	100	6	53
JAN			
20...	100	3	48
MAR			
16...	95	97	8410
MAY			
11...	67	54	1200
JUL			
14...	96	15	286
SEP			
21...	85	21	88

01652500 FOURMILE RUN AT ALEXANDRIA, VA.

LOCATION.--Lat 38°50'35", long 77°05'09", Arlington County, Hydrologic Unit 02070010, on left bank at upstream side of bridge on Shirlington Road, at Arlington County-Alexandria City line, 0.1 mi (0.2 km) upstream from Interstate Highway 95, and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--13.8 mi^2 (35.7 km^2).

PERIOD OF RECORD.--May 1951 to September 1969, October 1969 to September 1973 (annual maximum only), October 1973 to September 1975, October 1975 to September 1977 (annual maximum only), July 1979 to September 1982 (discontinued as continuous-record station; converted to partial-record station).

REVISED RECORDS.--WSP 1622: 1954-55.

GAGE.--Water-stage recorder. Datum of gage is 28.57 ft (8.708 m) National Geodetic Vertical Datum of 1929. May 4, 1951, to Sept. 30, 1969, water-stage recorder, and Oct. 1, 1969, to Sept. 27, 1973, nonrecording gage, at site 0.4 mi (0.6 km) downstream at datum 6.02 ft (1.835 m) lower. Sept. 28, 1973, to Sept. 26, 1975, water-stage recorder, and Sept. 27, 1975, to Sept. 30, 1977, nonrecording gage, at present site and datum.

REMARKS.--Records fair except those above 400 ft^3/s (11.3 m^3/s), which are poor. Several observations of water temperature were made during the year. Water-quality records have been collected at this location and are published in reports of the Geological Survey.

AVERAGE DISCHARGE.--23 years (water years 1951-69, 1974-75, 1980-82), 15.4 ft^3/s (0.436 m^3/s), 15.15 in/yr (385 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft^3/s (413 m^3/s) July 22, 1969, gage height, 11.6 ft (3.536 m), site and datum then in use, from rating curve extended above 670 ft^3/s (19.0 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 17.8 ft (5.43 m), from floodmarks, June 21, 1972; minimum discharge, 0.6 ft^3/s (0.017 m^3/s) Sept. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft^3/s (51 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 28	2145	2680	76.2	7.79	2.374	Aug. 17	2000	2390	67.7	7.38	2.249
June 1	1800	*2960	84.4	8.20	2.499	Aug. 21	1745	1990	56.4	6.81	2.076

Minimum discharge, 1.1 ft^3/s (0.031 m^3/s) Sept. 19; minimum gage height, 3.04 ft (0.927 m) Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	4.2	20	44	35	6.8	8.3	6.4	194	12	3.4	3.9
2	16	4.2	19	6.1	120	6.8	6.2	6.0	19	12	18	12
3	3.0	4.2	4.5	15	258	6.2	52	5.8	69	72	6.0	11
4	2.8	4.0	4.5	106	17	6.2	7.2	5.9	27	9.6	3.8	3.1
5	3.3	4.2	5.3	7.7	7.6	6.4	6.5	5.9	200	7.6	49	3.1
6	58	76	4.3	6.1	6.4	6.5	29	5.8	19	7.7	60	2.8
7	7.8	5.7	4.2	5.7	5.7	79	5.8	6.2	15	7.0	4.4	2.4
8	4.3	5.4	4.2	5.4	5.5	11	5.6	49	12	9.9	3.7	1.9
9	4.0	5.4	4.2	5.0	88	7.6	21	10	11	8.9	30	1.9
10	4.2	5.1	3.7	4.8	9.0	6.9	6.1	8.1	50	36	4.0	2.1
11	4.5	5.1	3.7	4.8	6.8	6.8	5.7	7.4	17	10	3.3	2.0
12	4.5	5.1	3.9	4.7	6.1	43	5.6	8.6	20	9.1	5.9	1.8
13	4.6	5.1	4.0	4.7	10	12	5.5	7.0	376	8.6	2.8	1.8
14	2.9	5.3	73	4.6	6.0	7.9	5.2	6.0	22	58	2.8	1.5
15	2.5	5.1	56	6.8	5.7	12	5.0	6.0	14	9.7	3.0	1.4
16	2.5	4.8	76	7.2	16	87	5.1	5.9	11	6.8	2.9	1.7
17	2.5	4.8	6.9	6.6	119	16	44	5.5	11	6.0	129	1.5
18	18	4.8	5.8	4.9	34	10	9.8	5.9	8.9	5.3	4.8	1.6
19	3.7	4.8	4.4	4.7	93	8.5	5.5	45	8.2	33	1.7	1.3
20	2.2	4.9	4.3	4.6	17	24	5.3	8.3	8.3	9.8	1.4	2.1
21	2.3	5.0	4.4	4.8	10	17	5.5	7.8	8.4	6.6	112	1.2
22	2.5	4.5	7.5	5.3	8.6	7.7	5.3	84	8.7	4.6	7.9	122
23	47	4.5	7.7	6.0	7.1	6.8	5.1	6.9	9.3	6.2	5.4	3.6
24	6.1	4.5	5.5	6.8	6.5	6.5	5.4	6.5	8.9	4.7	4.9	2.9
25	15	4.5	5.1	6.2	6.0	6.5	5.3	6.0	9.3	4.7	5.1	2.6
26	108	4.5	4.8	5.4	5.9	18	178	6.1	9.3	5.1	4.7	29
27	105	4.5	5.1	4.8	7.4	6.3	116	6.9	9.3	42	4.1	69
28	7.2	4.2	4.9	4.6	12	6.1	13	190	9.4	8.5	3.7	3.1
29	4.8	4.2	4.8	4.6	---	6.2	7.1	74	37	3.6	3.7	2.9
30	4.2	4.2	4.6	4.5	---	5.9	6.4	85	15	140	3.4	2.8
31	4.2	---	26	4.5	---	30	---	28	---	13	4.1	---
TOTAL	471.6	212.8	392.3	316.9	929.3	487.6	591.5	715.9	1237.0	578.0	498.9	300.0
MEAN	15.2	7.09	12.7	10.2	33.2	15.7	19.7	23.1	41.2	18.6	16.1	10.0
MAX	108	76	76	106	258	87	178	190	376	140	129	122
MIN	2.2	4.0	3.7	4.5	5.5	5.9	5.0	5.5	8.2	3.6	1.4	1.2
CFSM	1.10	.51	.92	.74	2.41	1.14	1.43	1.67	2.99	1.35	1.17	.73
IN.	1.27	.57	1.06	.85	2.50	1.31	1.59	1.93	3.33	1.56	1.34	.81

CAL YR 1981 TOTAL 5341.2 MEAN 14.6 MAX 364 MIN 1.3 CFSM 1.06 IN 14.40
WTR YR 1982 TOTAL 6731.8 MEAN 18.4 MAX 376 MIN 1.2 CFSM 1.33 IN 18.15

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA

LOCATION.--Lat 38°48'46", long 77°13'43", Fairfax County, Hydrologic Unit 02070010, on left bank 800 ft (244 m) upstream from bridge on State Highway 620, 0.2 mi (0.3 km) upstream from Long Branch, and 2.3 mi (3.7 km) southwest of Annandale.

DRAINAGE AREA.--23.5 mi^2 (60.9 km^2).

PERIOD OF RECORD.--March 1947 to current year (fragmentary prior to October 1947).

REVISED RECORDS.--WSP 1502: 1952. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 191.24 ft (58.290 m) National Geodetic Vertical Datum of 1929 (levels by Stone and Webster Engineering Corp.). Prior to May 12, 1949, nonrecording gage at site 800 ft (244 m) downstream at datum 0.33 ft (0.101 m) lower. May 12, 1949, to June 4, 1970, water-stage recorder at site 800 ft (244 m) downstream at datum 0.33 ft (0.101 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--35 years, 27.7 ft^3/s (0.784 m^3/s), 16.01 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s (340 m^3/s) June 22, 1972, gage height, 15.96 ft (4.865 m), from high-water mark in gage house, from rating curve extended above 6,600 ft^3/s (190 m^3/s) on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 0.10 ft^3/s (0.003 m^3/s) Sept. 25, 26, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft^3/s (33.7 m^3/s) May 30, June 13, gage height, 7.41 ft (2.259 m), no peak above base of 1,400 ft^3/s (40 m^3/s); minimum, 0.62 ft^3/s (0.018 m^3/s) Sept. 19-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	3.2	9.2	78	142	14	31	15	51	8.1	8.1	2.0
2	28	3.2	28	11	36	12	12	13	27	6.4	5.7	24
3	2.7	3.4	4.7	12	508	11	59	12	35	47	6.4	32
4	1.4	3.4	4.0	127	50	11	22	11	47	15	4.2	4.0
5	1.2	4.5	6.4	18	24	11	14	11	215	7.4	26	2.0
6	16	38	4.0	10	17	11	49	9.9	35	6.4	188	1.8
7	16	4.5	2.7	8.8	13	85	16	9.9	24	6.0	18	2.1
8	1.8	2.9	2.9	7.7	12	36	13	32	16	5.7	9.9	2.0
9	1.1	2.7	3.2	7.0	96	17	32	18	13	6.0	11	1.8
10	1.0	4.2	2.9	6.4	27	14	17	9.9	45	16	6.4	1.8
11	1.0	5.0	3.2	5.0	15	14	13	8.8	17	8.4	5.3	1.7
12	1.0	4.0	3.4	5.0	12	60	13	8.4	15	6.0	40	1.4
13	1.0	4.0	3.2	5.0	17	23	13	8.1	549	4.7	6.4	1.1
14	1.1	3.2	39	5.0	13	17	13	7.7	51	5.3	4.7	1.2
15	1.5	2.9	92	6.0	12	18	12	7.7	23	20	4.5	1.7
16	1.6	2.7	33	6.0	29	100	11	7.4	22	15	4.0	1.2
17	2.0	3.2	15	5.3	136	48	26	7.0	26	5.3	81	.83
18	3.2	3.2	9.9	5.0	58	20	42	6.7	15	4.2	36	.76
19	7.5	2.9	7.0	5.0	134	16	13	7.0	12	15	6.7	.69
20	1.5	2.9	5.0	6.4	58	43	12	9.9	11	15	5.0	8.4
21	1.0	3.2	4.5	9.5	32	37	11	27	10	8.4	7.7	4.2
22	1.1	2.3	9.9	6.7	20	20	9.9	76	12	3.7	6.4	102
23	32	2.3	29	6.0	16	15	9.9	11	18	9.5	4.0	7.7
24	18	2.7	11	5.7	15	14	9.9	9.2	8.8	8.4	4.0	3.4
25	7.1	3.2	7.0	5.3	13	13	9.9	8.8	8.1	3.4	3.7	2.3
26	83	2.7	6.4	5.0	11	27	140	8.4	8.1	2.9	2.9	9.5
27	95	2.7	6.0	5.0	12	13	166	7.7	7.7	7.4	2.1	214
28	16	2.7	5.7	6.0	20	11	47	137	7.4	23	2.3	8.4
29	5.3	2.4	5.0	7.4	---	11	20	190	18	3.7	2.0	5.3
30	3.7	2.4	4.5	9.9	---	11	16	163	15	129	1.8	4.2
31	3.2	---	9.9	101	---	31	---	55	---	29	1.7	---
TOTAL	361.1	130.6	377.6	507.1	1548	784	872.6	913.5	1362.1	451.3	515.9	453.48
MEAN	11.6	4.35	12.2	16.4	55.3	25.3	29.1	29.5	45.4	14.6	16.6	15.1
MAX	95	38	92	127	508	100	166	190	549	129	188	214
MIN	1.0	2.3	2.7	5.0	11	11	9.9	6.7	7.4	2.9	1.7	.69
CFSM	.49	.19	.52	.70	2.35	1.08	1.24	1.26	1.93	.62	.71	.64
IN.	.57	.21	.60	.80	2.45	1.24	1.38	1.45	2.16	.71	.82	.72

CAL YR 1981 TOTAL 5896.40 MEAN 16.2 MAX 639 MIN 1.0 CFSM .69 IN 9.33
WTR YR 1982 TOTAL 8277.28 MEAN 22.7 MAX 549 MIN .69 CFSM .97 IN 13.10

01655500 CEDAR RUN NEAR WARRENTON, VA

LOCATION.--Lat 38°44'25", long 77°47'16", Fauquier County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on State Highway 672, 1.9 mi (3.1 km) north of Warrenton, and 14.5 mi (23.3 km) upstream from Licking Run.

DRAINAGE AREA.--12.3 mi² (31.9 km²).

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 1382: 1951-53. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 419.40 ft (127.833 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January and September, which are fair. Some regulation since September 1966 by Warrenton municipal water-supply reservoir 400 ft (120 m) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 12.7 ft³/s (0.360 m³/s), 14.02 in/yr (356 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,840 ft³/s (222 m³/s) June 21, 1972, gage height, 12.87 ft (3.923 m), from rating curve extended above 600 ft³/s (17 m³/s) on basis of areal study of flood of 1942; no flow part of each day Aug. 11-14, 1967, probably caused by dam 400 ft (120 m) above gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of about 13 ft (4.0 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1130	336	9.52	5.53	1.686
June 13	1300	*371	10.5	5.72	1.743

Minimum discharge, 0.05 ft³/s (0.001 m³/s) Nov. 7, result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	8.1	2.7	17	61	16	20	18	14	4.9	1.8	1.2
2	6.9	7.0	4.9	13	32	14	13	15	20	4.6	1.7	1.3
3	3.0	5.9	4.1	12	167	13	19	13	18	5.5	1.8	1.2
4	1.7	5.2	3.6	21	68	12	19	11	49	6.4	2.0	1.2
5	2.0	5.2	6.6	17	42	12	14	10	101	5.5	2.3	1.2
6	2.7	8.1	4.7	14	30	11	18	9.2	59	4.4	11	1.2
7	3.4	4.8	.71	13	23	21	12	8.4	38	3.6	5.1	1.1
8	2.7	1.3	3.7	9.8	19	22	12	9.0	27	3.4	3.1	1.1
9	2.6	3.6	5.6	9.5	32	19	16	9.8	21	3.9	2.6	1.1
10	1.9	3.2	4.7	7.2	27	17	15	7.7	36	4.2	2.1	1.1
11	1.7	3.2	.93	2.5	21	16	13	6.4	26	4.4	1.8	1.1
12	1.7	2.2	.55	2.3	18	22	12	6.2	21	3.6	4.1	1.1
13	1.9	2.4	.50	2.2	17	18	11	6.0	165	3.8	2.2	1.1
14	1.9	2.6	.71	2.3	15	16	10	5.7	84	3.9	1.7	1.1
15	2.0	2.7	12	2.5	14	20	9.5	4.9	46	5.1	1.4	1.0
16	2.4	1.2	14	2.2	21	28	9.0	4.6	33	3.4	1.6	1.0
17	6.4	2.7	10	2.0	55	34	9.5	4.4	27	2.8	1.7	1.0
18	9.1	3.9	8.8	1.8	48	28	11	4.1	22	2.4	2.2	1.0
19	7.6	1.3	6.7	1.8	54	25	8.4	3.9	18	2.2	1.5	.70
20	8.8	3.6	5.4	1.8	57	36	7.7	4.1	14	2.0	1.3	.35
21	10	3.1	5.1	1.9	50	58	7.7	4.6	12	1.7	1.4	.45
22	10	1.6	6.0	2.0	38	44	6.9	9.2	11	1.5	1.2	1.1
23	12	.82	8.2	2.2	29	34	5.8	7.3	9.5	1.8	1.2	1.0
24	11	1.9	9.5	2.5	25	27	6.2	6.2	8.4	1.8	1.2	1.0
25	10	2.7	8.7	2.2	21	23	6.2	5.8	7.7	1.6	1.3	1.0
26	11	1.6	8.0	1.8	17	19	20	5.3	8.0	1.6	1.2	1.1
27	12	2.6	7.5	1.7	17	16	35	9.8	7.1	1.6	1.2	1.5
28	7.6	3.0	7.1	1.5	17	13	38	24	6.4	1.6	1.2	1.2
29	16	1.7	6.6	1.6	---	13	26	18	6.4	1.7	1.2	1.1
30	12	1.2	5.8	1.9	---	12	22	18	6.0	1.8	1.2	1.0
31	9.1	---	6.2	22	---	16	---	11	---	2.0	1.2	---
TOTAL	193.8	98.42	179.60	196.2	1035	675	432.9	280.6	921.5	98.7	66.5	31.60
MEAN	6.25	3.28	5.79	6.33	37.0	21.8	14.4	9.05	30.7	3.18	2.15	1.05
MAX	16	8.1	14	22	167	58	38	24	165	6.4	11	1.5
MIN	1.7	.82	.50	1.5	14	11	5.8	3.9	6.0	1.5	1.2	.35
CFSM	.51	.27	.47	.52	3.01	1.77	1.17	.74	2.50	.26	.18	.09
IN.	.59	.30	.54	.59	3.13	2.04	1.31	.85	2.79	.30	.20	.10

CAL YR 1981 TOTAL 2185.02 MEAN 5.99 MAX 271 MIN .50 CFSM .49 IN 6.61
WTR YR 1982 TOTAL 4209.82 MEAN 11.5 MAX 167 MIN .35 CFSM .94 IN 12.73

01656000 CEDAR RUN NEAR CATLETT, VA

LOCATION.--Lat 38°38'12", long 77°37'31", Fauquier County, Hydrologic Unit 02070010, on right bank 100 ft (30 m) downstream from bridge on State Highway 806, 0.9 mi (1.4 km) downstream from Licking Run, and 1.4 mi (2.3 km) southeast of Catlett.

DRAINAGE AREA.--93.4 mi^2 (241.9 km^2).

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1973-77(P).

GAGE.--Water-stage recorder. Datum of gage is 199.15 ft (60.701 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 87.5 ft^3/s (2.478 m^3/s), 12.72 in/yr (323 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,600 ft^3/s (1,090 m^3/s) June 22, 1972, gage height, 27.66 ft (8.431 m), from floodmarks, from rating curve extended above 5,000 ft^3/s (140 m^3/s) on basis of contracted-opening measurement of peak flow; no flow on many days in 1954, 1957, 1959, 1963, 1964, and 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of about 22 ft (6.7 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft^3/s (51 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 1	0400	2000	56.6	8.79	2.679
Feb. 3	1930	*3620	103	11.29	3.441
Feb. 17	1900	1820	51.5	8.43	2.569
June 13	1830	2270	64.3	9.32	2.841

Minimum discharge, 0.40 ft^3/s (0.011 m^3/s) Sept. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	33	7.6	285	998	128	121	87	33	13	10	1.7
2	4.4	29	17	144	289	137	70	70	100	10	6.1	1.4
3	8.1	25	23	108	2540	106	86	57	64	7.9	4.4	3.2
4	7.4	21	18	405	899	83	163	47	487	17	3.1	5.0
5	4.7	20	20	202	326	76	79	40	794	14	18	2.4
6	3.9	22	21	115	220	65	75	36	347	11	618	1.9
7	3.3	24	17	83	147	357	63	33	185	9.0	263	1.7
8	3.6	17	12	60	116	330	49	32	127	7.3	68	1.7
9	4.6	12	11	46	394	163	62	32	86	9.8	40	1.5
10	4.1	12	13	42	259	121	94	21	269	11	25	2.0
11	3.8	11	11	40	148	107	62	16	197	63	16	1.9
12	3.9	12	[illegible]3	37	116	213	52	15	123	24	27	1.7
13	3.2	10	7.0	37	112	142	46	14	1350	18	21	1.3
14	3.9	9.1	7.8	53	104	112	43	13	646	13	12	1.1
15	3.8	9.1	113	48	99	189	37	12	244	13	8.5	1.1
16	5.1	9.6	138	38	177	338	35	11	162	10	6.9	1.3
17	3.8	8.9	83	29	976	367	35	10	132	7.4	23	1.7
18	3.6	9.9	58	26	610	189	67	9.5	140	6.1	14	1.3
19	9.2	12	44	24	637	148	44	11	87	5.3	9.2	.80
20	9.5	9.0	44	25	572	362	35	17	60	4.5	5.6	.55
21	8.1	8.0	37	34	406	348	34	13	46	4.3	4.6	.43
22	11	8.8	26	34	237	238	30	20	39	3.8	4.0	4.0
23	12	7.6	91	33	171	159	26	37	37	5.5	3.7	10
24	33	7.7	95	64	144	130	24	20	30	9.0	3.3	4.2
25	16	7.5	68	34	119	110	24	16	25	6.6	3.1	2.4
26	48	9.5	64	28	94	102	130	14	24	4.1	2.8	2.2
27	289	8.8	52	23	91	79	454	12	23	3.2	3.0	176
28	207	8.7	43	24	100	63	418	148	21	2.6	2.4	19
29	84	8.8	38	26	---	57	159	69	17	2.4	2.0	7.1
30	57	8.0	30	28	---	53	112	150	15	6.7	2.0	4.6
31	42	---	26	186	---	56	---	59	---	12	1.8	---
TOTAL	905.0	399.0	1244.7	2361	11101	5128	2729	1141.5	5910	334.5	1231.5	265.18
MEAN	29.2	13.3	40.2	76.2	396	165	91.0	36.8	197	10.8	39.7	8.84
MAX	289	33	138	405	2540	367	454	150	1350	63	618	176
MIN	3.2	7.5	7.0	23	91	53	24	9.5	15	2.4	1.8	.43
CFSM	.31	.14	.43	.82	4.24	1.77	.97	.39	2.11	.12	.43	.10
IN.	.36	.16	.50	.94	4.42	2.04	1.09	.45	2.35	.13	.49	.11

CAL YR 1981 TOTAL 13410.51 MEAN 36.7 MAX 2300 MIN .19 CFSM .39 IN 5.34
WTR YR 1982 TOTAL 32750.38 MEAN 89.7 MAX 2540 MIN .43 CFSM .96 IN 13.04

01656100 CEDAR RUN NEAR ADEN, VA

LOCATION.--Lat 38°36'58", long 77°33'16", Prince William County, Hydrologic Unit 02070010, on left bank at upstream side of bridge on State Highway 611, 0.5 mi (0.8 km) downstream from Darrels Run, 0.8 mi (1.3 km) downstream from Town Run, and 3.0 mi (4.8 km) southwest of Aden.

DRAINAGE AREA.--155 mi² (401 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 166.27 ft (50.679 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional diurnal fluctuation during low flow caused by irrigation dam 4.5 mi (7.2 km) above gage. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 188 ft³/s (5.324 m³/s), 16.47 in/yr (418 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s (422 m³/s) Oct. 1, 1979, gage height, 15.29 ft (4.660 m), from rating curve extended above 6,600 ft³/s (190 m³/s); minimum daily, 0.25 ft³/s (0.007 m³/s) Oct. 14, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 21.37 ft (6.514 m), from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,800 ft³/s (110 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2200	*8120	230	12.98	3.956
Feb. 17	2330	4030	114	10.64	3.243
June 13	2330	5250	149	11.40	3.475

Minimum discharge, 1.9 ft³/s (0.054 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	36	11	647	2190	182	189	135	67	15	27	3.4
2	6.3	32	14	321	591	221	115	109	117	13	17	3.3
3	5.4	28	28	201	5330	170	126	88	74	10	13	2.9
4	8.8	24	24	1050	3490	132	231	70	638	12	10	2.8
5	8.1	22	25	455	572	121	117	56	2000	17	9.7	2.8
6	5.0	32	27	204	364	104	106	48	657	13	560	2.8
7	4.1	32	24	151	227	620	94	44	262	11	470	2.6
8	3.8	24	20	117	173	651	68	41	160	11	94	2.4
9	3.7	19	17	94	641	268	83	43	113	14	53	2.4
10	4.1	16	16	53	456	183	144	38	308	14	35	2.4
11	4.4	16	17	44	229	157	102	30	245	48	24	2.4
12	4.3	15	15	32	175	364	80	26	146	29	21	2.4
13	3.8	15	12	32	165	233	66	24	2530	18	31	2.4
14	3.8	13	12	38	160	178	60	22	1960	16	17	2.5
15	3.7	12	212	39	156	327	50	21	327	12	13	2.5
16	3.7	12	341	35	265	630	45	18	192	12	10	2.6
17	3.8	12	173	33	1900	714	45	17	151	9.7	49	2.5
18	4.1	12	113	26	1550	327	100	16	156	7.8	15	2.5
19	4.0	14	77	26	1210	229	75	17	106	8.8	16	2.5
20	7.8	14	54	26	1160	638	52	29	74	10	9.1	2.8
21	8.3	12	35	30	710	597	46	20	54	6.7	7.2	2.5
22	8.8	11	36	31	380	373	41	34	45	6.1	5.7	3.7
23	12	11	165	32	251	227	34	61	40	326	5.4	2.9
24	20	11	195	39	203	178	30	39	34	100	5.2	2.4
25	21	11	127	33	163	150	29	33	28	23	5.0	2.8
26	21	11	134	29	129	144	146	30	25	14	4.6	3.1
27	351	13	104	25	125	117	889	26	24	10	4.6	259
28	366	12	81	24	138	94	1000	129	21	8.5	4.3	46
29	110	12	66	26	---	83	270	641	19	7.6	3.8	17
30	65	12	50	26	---	75	170	271	17	28	3.4	10
31	47	---	41	158	---	80	---	131	---	40	3.3	---
TOTAL	1130.0	516	2266	4077	23103	8567	4603	2307	10590	871.2	1546.3	402.3
MEAN	36.5	17.2	73.1	132	825	276	153	74.4	353	28.1	49.9	13.4
MAX	366	36	341	1050	5330	714	1000	641	2530	326	560	259
MIN	3.7	11	11	24	125	75	29	16	17	6.1	3.3	2.4
CFSM	.24	.11	.47	.85	5.32	1.78	.99	.48	2.28	.18	.32	.09
IN.	.27	.12	.54	.98	5.54	2.06	1.10	.55	2.54	.21	.37	.10

CAL YR 1981 TOTAL 22042.7 MEAN 60.4 MAX 3010 MIN 3.3 CFSM .39 IN 5.29
WTR YR 1982 TOTAL 59978.8 MEAN 164 MAX 5330 MIN 2.4 CFSM 1.06 IN 14.39

01656500 BROAD RUN AT BUCKLAND, VA

LOCATION.--Lat 38°46'50", long 77°40'22", Prince William County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on U.S. Highway 29 at Buckland and 1.1 mi (1.8 km) upstream from South Run.

DRAINAGE AREA.--50.5 mi² (130.8 km²).

PERIOD OF RECORD.--July 1950 to September 1979, October 1980 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 284.58 ft (86.740 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 51.0 ft³/s (1.444 m³/s), 13.71 in/yr (348 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft³/s (476 m³/s) June 21, 1972, gage height, 13.92 ft (4.243 m), from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurements at gage heights 13.08 ft (3.987 m) and 13.92 ft (4.243 m); minimum, 0.20 ft³/s (0.006 m³/s) Oct. 10, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (23 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	----	1220	34.6	Ice jam		June 13	1400	*1250	35.4	5.59	1.704
Feb. 3	1330	1130	32.0	5.36	1.634	Aug. 6	1330	1140	32.3	5.37	1.637
May 28	2400	818	23.2	4.73	1.442						

Minimum discharge, 3.8 ft³/s (0.11 m³/s) Dec. 11, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	19	8.3	80	289	60	57	51	102	24	11	6.9
2	5.8	18	14	67	114	54	41	43	93	19	9.1	9.1
3	6.5	16	13	46	793	47	57	37	119	20	8.7	27
4	5.5	16	11	106	292	43	64	32	201	24	8.3	13
5	4.9	14	11	80	154	41	44	29	416	20	32	10
6	4.9	17	10	51	112	38	47	26	239	18	332	9.1
7	6.2	19	9.6	44	78	92	40	24	147	16	89	8.7
8	6.2	15	9.1	36	64	110	34	26	106	15	39	8.7
9	5.1	13	9.1	29	138	76	44	33	80	16	31	9.6
10	4.9	12	8.7	21	119	62	51	24	130	18	24	9.6
11	4.9	11	8.3	18	78	57	40	22	106	19	18	11
12	4.9	11	7.6	17	62	95	36	20	76	18	30	9.1
13	5.1	11	6.5	18	59	74	34	19	588	15	19	8.7
14	5.8	10	7.6	21	51	64	32	18	326	14	14	8.3
15	5.8	10	39	20	50	65	29	16	168	31	13	8.3
16	6.5	10	38	19	81	117	28	15	123	18	13	8.7
17	6.5	9.1	27	16	260	168	29	15	104	14	43	8.3
18	6.9	8.7	22	14	202	110	36	14	87	12	27	8.0
19	7.6	8.3	15	13	221	89	27	13	68	11	16	8.0
20	7.6	8.7	13	13	247	152	26	13	57	11	13	10
21	8.0	8.7	11	14	212	212	26	19	47	11	14	11
22	8.3	7.6	13	16	147	145	23	28	43	10	12	19
23	10	7.6	33	18	117	108	22	25	48	10	11	16
24	18	7.6	44	20	97	89	20	23	37	11	10	12
25	13	8.7	31	17	78	76	21	23	32	9.1	10	11
26	27	8.7	26	16	62	68	101	20	34	8.0	8.3	12
27	125	8.7	24	14	59	59	161	20	36	7.6	8.0	149
28	89	8.7	21	13	60	50	150	204	27	7.3	8.0	28
29	39	8.7	19	13	---	46	85	295	25	8.0	7.3	17
30	28	8.0	16	13	---	43	64	100	30	8.3	6.5	14
31	22	---	15	40	---	46	---	64	---	11	6.5	---
TOTAL	504.0	339.8	540.8	923	4296	2556	1469	1311	3695	454.3	891.7	489.1
MEAN	16.3	11.3	17.4	29.8	153	82.5	49.0	42.3	123	14.7	28.8	16.3
MAX	125	19	44	106	793	212	161	295	588	31	332	149
MIN	4.9	7.6	6.5	13	50	38	20	13	25	7.3	6.5	6.9
CFSM	.32	.22	.35	.59	3.03	1.63	.97	.84	2.44	.29	.57	.32
IN.	.37	.25	.40	.68	3.16	1.88	1.08	.97	2.72	.33	.66	.36

CAL YR 1981 TOTAL 7585.1 MEAN 20.8 MAX 302 MIN 2.3 CFSM .41 IN 5.59
WTR YR 1982 TOTAL 17469.7 MEAN 47.9 MAX 793 MIN 4.9 CFSM .95 IN 12.87

01656650 BROAD RUN NEAR BRISTOW, VA

LOCATION.--Lat 38°44'56", long 77°33'50", Prince William County, Hydrologic Unit 02070010, on left bank 50 ft (15 m) downstream from bridge on State Highway 619, 0.2 mi (0.3 km) upstream from Dawkins Branch, 1.9 mi (3.1 km) downstream from Rocky Branch, and 2.3 mi (3.7 km) northwest of Bristow.

DRAINAGE AREA.--89.6 mi² (232.1 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 185 ft (56.4 m), from topographic map.

REMARKS.--Records good. Town of Manassas diverts about 3.0 ft³/s (0.085 m³/s) daily from municipal water-supply reservoir 6.0 mi (9.7 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 97.3 ft³/s (2.756 m³/s), 14.75 in/yr (375 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s (221 m³/s) Oct. 9, 1976, gage height, 16.11 ft (4.910 m), from rating curve extended above 4,100 ft³/s (120 m³/s); minimum, 0.90 ft³/s (0.025 m³/s) Sept. 30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1300	*2380	67.4	9.57	2.917
Feb. 17	1700	1020	28.9	6.09	1.856
May 28	2330	1880	53.2	8.34	2.542
June 5	1230	1470	41.6	7.33	2.234
June 13	1330	2140	60.6	9.01	2.746
Aug. 6	1630	1090	30.9	6.28	1.914

Minimum discharge, 4.5 ft³/s (0.13 m³/s) Nov. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	14	7.8	163	500	93	97	80	131	14	15	5.7
2	8.5	12	8.5	174	261	91	64	45	245	9.9	17	6.4
3	8.2	11	8.9	136	1520	78	117	30	152	8.8	23	7.3
4	7.8	10	7.8	264	944	70	157	32	434	15	17	7.6
5	7.1	8.9	11	214	377	68	78	29	1060	13	25	8.0
6	7.1	14	20	128	242	59	100	24	686	12	402	8.4
7	7.1	27	11	100	160	208	74	22	257	10	303	8.0
8	8.2	11	9.3	80	127	260	34	22	135	8.8	57	7.6
9	8.9	9.3	22	66	246	168	53	35	89	9.2	21	8.0
10	8.5	8.2	20	50	272	119	91	25	222	8.8	14	8.4
11	8.5	7.1	15	37	174	97	76	18	174	10	10	8.8
12	8.5	6.4	9.3	32	124	168	61	16	112	13	11	8.8
13	8.5	6.0	7.4	31	107	141	53	15	1210	13	11	8.4
14	8.5	5.7	7.4	37	91	114	49	14	836	11	8.4	8.8
15	8.5	5.4	33	34	84	130	44	12	305	10	6.7	8.8
16	8.5	5.4	60	31	135	242	38	10	174	15	6.0	8.8
17	8.5	8.2	75	29	626	320	38	9.2	122	14	13	8.8
18	8.5	4.8	84	24	566	227	59	9.6	95	12	20	8.8
19	9.3	8.2	65	23	515	168	42	9.6	76	10	14	9.2
20	10	6.8	51	23	578	242	36	13	39	11	8.8	9.2
21	10	7.4	40	26	470	442	38	16	24	11	8.4	8.8
22	10	8.9	38	29	314	338	32	22	26	12	7.0	10
23	12	7.8	60	34	202	205	26	30	26	11	5.4	9.2
24	17	7.1	78	35	157	152	18	29	22	9.9	5.4	8.4
25	20	6.8	82	28	112	119	17	24	19	9.9	5.4	8.8
26	33	6.8	77	28	70	119	145	23	19	9.6	6.4	11
27	85	6.8	68	24	78	84	461	21	19	9.2	5.7	47
28	147	6.4	62	22	89	36	419	232	16	10	5.1	39
29	72	8.5	63	22	---	42	194	672	15	12	5.1	17
30	17	9.3	41	21	---	45	114	227	15	18	5.1	12
31	16	---	37	67	---	53	---	97	---	17	5.1	---
TOTAL	607.7	265.2	1179.4	2012	9141	4698	2825	1863.4	6755	358.1	1067.0	335.0
MEAN	19.6	8.84	38.0	64.9	326	152	94.2	60.1	225	11.6	34.4	11.2
MAX	147	27	84	264	1520	442	461	672	1210	18	402	47
MIN	7.1	4.8	7.4	21	70	36	17	9.2	15	8.8	5.1	5.7
CFSM	.22	.10	.42	.72	3.64	1.70	1.05	.67	2.51	.13	.38	.13
IN.	.25	.11	.49	.84	3.80	1.95	1.17	.77	2.80	.15	.44	.14

CAL YR 1981 TOTAL 8163.6 MEAN 22.4 MAX 270 MIN 2.3 CFSM .25 IN 3.39
WTR YR 1982 TOTAL 31106.8 MEAN 85.2 MAX 1520 MIN 4.8 CFSM .95 IN 12.91

01656725 BULL RUN NEAR CATHARPIN, VA

LOCATION.--Lat 38°53'21", long 77°34'14", Prince William County, Hydrologic Unit 02070010, on right bank 20 ft (6 m) downstream from bridge on State Highway 705, 0.7 mi (1.1 km) downstream from Chestnut Lick, 2.5 mi (4.0 km) north of Catharpin, and 6.7 mi (10.8 km) northeast of Gainesville.

DRAINAGE AREA.--25.8 mi² (66.8 km²).

PERIOD OF RECORD.--May 1969 to current year. Prior to October 1970, published as "on State Highway 705."

REVISED RECORDS.--WDR VA-75-1: 1974(P).

GAGE.--Water-stage recorder. Datum of gage is 237.78 ft (72.475 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 33.6 ft³/s (0.952 m³/s), 17.69 in/yr (449 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,400 ft³/s (1,120 m³/s) June 22, 1972, gage height, 18.92 ft (5.767 m), from floodmarks, from rating curve extended above 3,000 ft³/s (85 m³/s) on basis of slope-area measurement of peak flow; no flow Sept. 8 to Oct. 10, 1970, July 5-9, 1977, Sept. 4-18, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 820 ft³/s (23 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1200	1540	43.6	6.22	1.896	Aug. 6	1130	*2190	62.0	7.17	2.185
June 13	1330	1960	55.5	6.84	2.085						

Minimum discharge, 0.04 ft³/s (0.001 m³/s) Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	1.4	2.1	45	214	23	48	21	75	5.2	1.7	.39
2	.14	1.2	4.1	16	57	19	21	18	47	4.4	1.5	.30
3	.27	1.4	3.8	10	677	17	42	14	39	4.4	1.2	.66
4	.24	1.2	3.4	82	139	16	39	13	55	5.5	.93	.93
5	.15	1.2	2.7	39	69	15	22	12	327	4.4	1.4	.75
6	.14	1.2	2.2	22	50	13	26	9.5	75	3.6	393	.39
7	.18	2.6	2.6	18	32	73	19	8.7	39	3.3	12	.21
8	.15	2.7	2.2	14	26	60	16	14	24	5.0	3.9	.15
9	.18	2.2	2.0	11	91	34	26	18	18	6.7	3.1	.14
10	.21	1.6	1.4	7.5	61	26	33	9.5	32	3.9	2.8	.13
11	.21	1.5	1.6	4.9	33	24	23	7.5	26	4.2	2.2	.13
12	.18	1.5	1.8	4.8	26	62	19	6.7	19	3.6	3.6	.09
13	.18	1.5	1.5	5.0	25	35	17	5.9	708	2.5	2.3	.11
14	.15	1.2	2.0	5.2	23	26	15	5.2	108	2.2	2.0	.11
15	.18	1.2	11	5.4	24	25	14	4.7	53	2.8	1.7	.09
16	.18	1.2	10	5.4	48	170	12	4.2	34	2.6	1.7	.09
17	.21	1.1	6.0	5.4	247	105	13	3.9	28	2.0	1.8	.09
18	.21	1.1	4.3	5.2	101	52	19	3.6	23	1.7	2.2	.06
19	.24	1.0	2.9	5.0	213	41	13	3.3	19	1.5	1.7	.04
20	.24	1.1	2.2	4.7	199	80	12	3.3	14	1.4	1.4	.08
21	.24	1.2	1.5	5.0	111	86	11	3.1	12	1.4	1.2	.11
22	.27	1.4	2.2	5.2	69	52	9.5	11	10	1.2	1.1	.84
23	.48	1.4	9.7	5.4	48	37	8.3	7.5	10	1.1	1.0	2.3
24	1.4	1.5	9.0	5.6	38	30	7.9	6.7	8.7	1.4	1.0	1.4
25	1.6	2.0	4.8	5.4	28	26	7.5	7.9	7.5	1.5	1.0	.84
26	2.2	2.0	3.6	4.9	22	24	113	7.5	7.5	1.1	.93	.84
27	22	1.8	2.9	4.5	21	19	139	5.5	6.7	.93	.84	23
28	12	1.8	2.6	4.5	23	17	85	28	6.3	.66	.75	2.0
29	3.8	1.8	2.1	4.5	---	16	39	88	6.7	.48	.57	.84
30	2.2	1.8	1.8	5.6	---	16	26	38	7.5	.57	.57	.57
31	1.8	---	1.5	27	---	28	---	37	---	.93	.48	---
TOTAL	51.77	45.8	111.5	393.1	2715	1267	895.2	426.2	1845.9	82.17	451.57	37.68
MEAN	1.67	1.53	3.60	12.7	97.0	40.9	29.8	13.7	61.5	2.65	14.6	1.26
MAX	22	2.7	11	82	677	170	139	88	708	6.7	393	23
MIN	.14	1.0	1.4	4.5	21	13	7.5	3.1	6.3	.48	.48	.04
CFSM	.07	.06	.14	.49	3.76	1.59	1.16	.53	2.38	.10	.57	.05
IN.	.07	.07	.16	.57	3.91	1.83	1.29	.61	2.66	.12	.65	.05

CAL YR 1981 TOTAL 2716.48 MEAN 7.44 MAX 244 MIN .03 CFSM .29 IN 3.92
WTR YR 1982 TOTAL 8322.89 MEAN 22.8 MAX 708 MIN .04 CFSM .88 IN 12.00

01656960 CUB RUN NEAR BULL RUN, VA

LOCATION.--Lat 38°49'16", long 77°27'57", Fairfax County, Hydrologic Unit 02070010, on right bank 20 ft (6 m) downstream from bridge on State Highway 658, 0.6 mi (1.0 km) downstream from Big Rocky Run, 1.2 mi (1.9 km) southeast of Bull Run, and 2.3 mi (3.7 km) upstream from mouth.

DRAINAGE AREA.--49.9 mi² (129.2 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 151.54 ft (46.189 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 57.5 ft³/s (1.628 m³/s), 15.65 in/yr (398 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s (300 m³/s) Oct. 1, 1979, gage height, 16.43 ft (5.008 m), from rating curve extended above 4,100 ft³/s (120 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) Oct. 23, 1980, Sept. 30, Oct. 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 28.64 ft (8.729 m), from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2000	2000	56.6	10.39	3.167	Aug. 6	1830	1920	54.4	10.25	3.124
June 13	2000	*3110	88.1	11.82	3.603						

Minimum daily discharge, 0.10 ft³/s (0.003 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	2.0	1.8	38	433	28	80	31	82	8.5	3.4	1.2
2	.48	1.6	2.4	36	115	25	35	26	193	5.6	3.1	2.7
3	.48	1.1	3.6	17	1340	23	76	20	42	6.2	2.7	6.6
4	.39	1.1	3.1	140	462	20	136	17	182	8.2	2.3	2.9
5	.39	1.0	2.7	70	124	18	44	15	673	5.6	7.5	2.2
6	.30	1.8	2.3	26	76	17	49	13	211	4.8	724	1.4
7	.30	1.4	2.5	17	45	147	47	11	73	3.8	99	1.2
8	.66	1.6	2.3	12	33	208	32	12	38	3.4	20	1.4
9	.22	1.4	2.2	10	146	78	35	19	27	2.9	12	1.2
10	.18	1.8	2.0	6.4	162	46	74	14	90	3.1	10	1.4
11	.18	1.6	1.8	4.8	62	37	41	10	79	3.6	6.9	1.4
12	.22	1.4	2.0	4.2	40	168	30	8.8	38	3.1	65	1.6
13	.14	1.4	2.0	3.8	34	87	26	7.2	1510	2.9	17	1.6
14	.14	1.1	2.7	3.6	33	61	23	6.2	514	2.7	9.1	1.6
15	.10	1.2	28	3.7	32	41	19	5.6	90	3.1	6.6	1.6
16	.14	1.4	23	3.8	70	184	17	5.1	46	2.9	5.4	1.4
17	.14	1.4	16	3.9	390	378	16	4.6	33	2.9	4.8	1.4
18	.14	1.2	12	3.7	299	101	27	4.4	27	2.3	9.8	1.1
19	.30	1.2	7.5	3.5	350	64	23	4.4	21	27	5.6	1.0
20	.22	1.2	5.4	3.2	440	113	17	4.4	18	29	4.1	2.0
21	.18	1.2	3.8	3.2	237	149	15	5.1	15	8.8	3.8	2.2
22	.18	1.4	3.6	3.4	116	93	12	8.5	13	4.6	3.1	24
23	.39	1.4	9.5	3.6	67	52	11	8.2	14	4.1	2.7	13
24	3.4	1.4	25	3.8	48	38	10	6.6	9.8	4.1	2.7	5.4
25	3.6	2.0	14	3.5	36	32	9.1	5.9	8.2	2.7	2.5	3.6
26	9.4	2.0	9.5	3.2	29	34	178	5.9	7.8	2.7	2.0	3.1
27	42	1.8	7.2	3.1	26	29	361	5.6	7.5	2.5	1.6	113
28	37	1.8	6.2	3.1	26	23	278	17	6.6	3.4	1.2	20
29	10	1.8	5.1	3.1	---	20	77	357	9.8	2.5	1.0	9.1
30	4.1	1.8	4.4	3.4	---	19	42	111	15	3.1	.84	5.6
31	2.3	---	4.4	29	---	19	---	299	---	4.8	1.0	---
TOTAL	117.89	44.5	218.5	473.0	5271	2352	1840.1	1068.5	4093.7	174.9	1040.74	235.9
MEAN	3.80	1.48	7.05	15.3	188	75.9	61.3	34.5	136	5.64	33.6	7.86
MAX	42	2.0	28	140	1340	378	361	357	1510	29	724	113
MIN	.10	1.0	1.8	3.1	26	17	9.1	4.4	6.6	2.3	.84	1.0
CFSM	.08	.03	.14	.31	3.77	1.52	1.23	.69	2.73	.11	.67	.16
IN.	.09	.03	.16	.35	3.93	1.75	1.37	.80	3.05	.13	.78	.18

CAL YR 1981 TOTAL 4719.64 MEAN 12.9 MAX 241 MIN .10 CFSM .26 IN 3.52
WTR YR 1982 TOTAL 16930.73 MEAN 46.4 MAX 1510 MIN .10 CFSM .93 IN 12.62

01657415 BULL RUN NEAR CLIFTON, VA

LOCATION.--Lat 38°45'59", long 77°24'52", Fairfax County, Hydrologic Unit 02070010, on left bank 0.6 mi (1.0 km) downstream from Popes Head Creek, 1.6 mi (2.6 km) upstream from Buckhall Branch, and 1.8 mi (2.9 km) southwest of Clifton.

DRAINAGE AREA.--185 mi² (479 km²).

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.24 ft (36.649 m) National Geodetic Vertical Datum of 1929. September 1972 to June 1978, at site 500 ft (152 m) upstream at datum 3.59 ft (1.094 m) higher.

REMARKS.--Records good. Slight diurnal fluctuation caused by Upper Occoquan Sewage Authority treatment plant 4.8 mi (7.7 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 222 ft³/s (6.287 m³/s), 16.30 in/yr (414 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) Sept. 26, 1975, gage height, 19.52 ft (5.950 m), datum then in use, from rating curve extended above 400 ft³/s (11 m³/s) on basis of runoff comparison with upstream station near Manassas; minimum, 4.6 ft³/s (0.13 m³/s) Sept. 21, 1982, gage height, 1.85 ft (0.564 m), from recorded range in stage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of about 35 ft (10.7 m), discharge, about 80,000 ft³/s (2,300 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft³/s (120 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	Unknown	5200	147	a12.1	3.688	June 14	Unknown	6300	178	a13.0	3.962

a About.

Minimum discharge, 4.6 ft³/s (0.13 m³/s) Sept. 21, gage height, 1.85 ft (0.564 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	30	16	128	1190	162	250	162	287	53	38	5.6
2	22	27	24	199	457	143	158	128	702	40	27	16
3	13	26	25	96	3200	127	214	107	205	43	18	42
4	12	25	27	398	2280	115	432	92	620	50	25	24
5	12	24	25	339	552	105	189	83	1890	38	48	18
6	12	30	22	140	364	97	189	74	873	35	856	13
7	12	24	20	102	246	256	192	68	353	31	635	13
8	12	18	18	82	182	786	128	72	210	28	110	10
9	10	17	17	68	415	348	142	100	145	30	71	9.2
10	9.8	18	16	58	620	234	268	80	391	31	57	12
11	10	18	15	46	294	111	187	63	371	32	40	11
12	9.5	18	15	35	210	454	138	55	210	34	100	11
13	9.0	12	14	36	176	378	115	50	2980	28	81	12
14	10	14	16	38	164	276	105	45	2340	26	51	12
15	9.3	15	100	39	152	212	92	40	455	24	38	12
16	10	16	124	37	240	426	85	38	283	16	29	12
17	9.8	16	84	40	1100	1090	83	38	209	13	43	12
18	9.5	15	67	35	1080	429	128	34	171	13	34	12
19	11	14	50	32	1020	298	104	31	128	73	36	12
20	11	14	42	33	1360	408	85	34	104	142	30	11
21	9.8	14	33	35	924	662	76	33	89	44	25	5.6
22	11	14	31	35	522	478	70	65	78	26	18	66
23	13	14	47	39	337	296	62	69	86	25	10	77
24	27	15	93	43	266	225	58	55	72	27	16	40
25	14	15	76	42	209	189	57	48	60	24	16	26
26	36	14	57	39	160	196	366	46	55	21	9.2	20
27	142	14	48	38	142	160	990	43	52	18	16	235
28	196	14	42	38	142	125	966	114	50	17	14	164
29	83	14	38	39	---	111	341	836	46	24	16	50
30	48	15	30	40	---	103	218	284	60	122	14	36
31	35	---	28	77	---	105	---	672	---	63	9.2	---
TOTAL	839.7	534	1260	2446	18004	9105	6488	3659	13576	1191	2530.4	999.4
MEAN	27.1	17.8	40.6	78.9	643	294	216	118	453	38.4	81.6	33.3
MAX	196	30	124	398	3200	1090	990	836	2980	142	856	235
MIN	9.0	12	14	32	142	97	57	31	46	13	9.2	5.6
CFSM	.15	.10	.22	.43	3.48	1.59	1.17	.64	2.45	.21	.44	.18
IN.	.17	.11	.25	.49	3.62	1.83	1.30	.74	2.73	.24	.51	.20

CAL YR 1981 TOTAL 20297.9 MEAN 55.6 MAX 732 MIN 9.0 CFSM .30 IN 4.08
WTR YR 1982 TOTAL 60632.5 MEAN 166 MAX 3200 MIN 5.6 CFSM .90 IN 12.19

POTOMAC RIVER BASIN

01657655 HOOES RUN NEAR OCCOQUAN, VA

LOCATION.--Lat 38°40'48", long 77°17'25", Prince William County, Hydrologic Unit 02070010, on left bank 900 ft (274 m) upstream from bridge on State Highway 641, 0.9 mi (1.4 km) downstream from Lake Omiscol, and 1.6 mi (2.6 km) west of Occoquan.

DRAINAGE AREA.--3.97 mi^2 (10.28 km^2).

PERIOD OF RECORD.--November 1974 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 122.74 ft (37.411 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--7 years, 4.56 ft^3/s (0.129 m^3/s), 15.60 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft^3/s (36.2 m^3/s) Sept. 26, 1975, gage height, 8.18 ft (2.493 m), from rating curve extended above 70 ft^3/s (2.0 m^3/s) on basis of velocity-area study; minimum, 0.01 ft^3/s (<0.001 m^3/s) Sept. 11, 12, 1976, many days in September and October 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 28	2100	429	12.1	4.84	1.475	Aug. 8	1730	*1030	29.2	7.38	2.249
May 28	2300	424	12.0	4.81	1.466	Aug. 8	1830	377	10.7	4.55	1.387

Minimum daily discharge, 0.04 ft^3/s (0.001 m^3/s) Oct. 11, 16, Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.88	.67	11	21	5.4	5.7	4.9	11	1.2	1.3	.06
2	.15	.78	1.2	5.9	13	2.6	4.6	4.1	14	1.2	.65	.06
3	.06	.78	.57	4.4	65	1.2	6.5	3.4	9.3	2.4	.75	.06
4	.06	.78	1.2	15	25	1.1	5.7	1.7	10	1.7	.65	.06
5	.06	.88	.98	9.0	10	1.2	4.1	1.6	50	1.3	1.2	.06
6	.06	1.4	.67	5.8	6.9	1.9	4.9	2.5	17	1.2	2.0	.06
7	.49	.98	.36	3.6	5.2	9.4	4.1	1.4	10	.98	1.4	.06
8	1.6	.88	.35	2.5	4.1	9.6	3.4	1.3	5.4	1.7	48	.06
9	.24	.88	.67	2.5	10	5.7	5.4	2.6	2.8	1.4	13	.06
10	.12	.78	.88	1.6	8.9	4.9	5.7	1.9	6.4	1.3	4.2	.06
11	.04	.78	.46	1.4	5.7	4.6	5.2	1.4	6.9	3.1	1.6	.06
12	1.4	.57	.36	1.4	4.4	7.2	4.9	1.5	4.4	3.4	1.9	.06
13	.33	.36	.33	1.4	4.4	6.2	2.6	1.2	77	1.4	2.6	.06
14	.21	.46	2.4	1.4	3.6	6.2	3.0	1.3	24	1.1	1.2	.06
15	.09	.57	12	1.4	3.6	8.2	3.2	1.3	10	.89	.88	.06
16	.04	.57	10	1.4	5.9	13	1.5	1.1	6.2	.80	.67	.06
17	.09	.67	5.2	1.4	17	11	5.0	.70	6.2	.70	.72	.04
18	.61	.57	3.4	1.4	19	6.9	10	.70	3.8	.65	.78	.04
19	.57	.33	2.5	1.5	21	5.2	5.7	.98	2.1	.82	.98	.04
20	.88	.36	1.7	1.5	19	10	5.2	1.3	1.7	1.2	.57	.06
21	.88	.36	1.4	1.6	13	10	3.0	3.6	1.7	.98	.36	.12
22	.78	.33	2.1	1.6	8.9	7.9	2.6	3.9	1.9	.70	.30	4.3
23	1.7	.27	3.4	1.7	6.2	5.9	2.6	2.1	2.5	.75	.27	.88
24	.78	.27	3.6	1.7	3.9	5.4	3.0	1.5	1.7	.75	.27	.33
25	1.4	.27	2.6	1.6	4.1	4.9	2.1	1.3	1.2	.65	.27	.27
26	8.6	.27	2.3	1.5	3.9	5.7	11	1.2	1.9	.60	.21	1.5
27	15	.27	2.1	1.4	3.4	5.4	37	1.1	1.3	.70	.21	8.4
28	7.6	.27	1.7	1.4	3.6	4.6	15	44	1.3	.55	.21	2.4
29	2.2	.27	1.6	1.4	---	3.4	8.2	37	1.3	.40	.18	.88
30	1.2	.21	1.4	1.9	---	3.2	5.9	7.6	1.4	5.2	.15	.46
31	.88	---	2.5	6.7	---	4.4	---	2.8	---	3.6	.12	---
TOTAL	48.18	17.05	70.61	98.0	319.7	182.3	186.8	142.98	294.4	43.32	87.60	20.68
MEAN	1.55	.57	2.28	3.16	11.4	5.88	6.23	4.61	9.81	1.40	2.83	.69
MAX	15	1.4	12	15	65	13	37	44	77	5.2	48	8.4
MIN	.04	.21	.33	1.4	3.4	1.1	1.5	.70	1.2	.40	.12	.04
CFSM	.39	.14	.57	.80	2.87	1.48	1.57	1.16	2.47	.35	.71	.17
IN.	.45	.16	.66	.92	2.99	1.71	1.75	1.34	2.76	.41	.82	.19

CAL YR 1981 TOTAL 663.41 MEAN 1.82 MAX 21 MIN .04 CFSM .46 IN 6.21
WTR YR 1982 TOTAL 1511.62 MEAN 4.14 MAX 77 MIN .04 CFSM 1.04 IN 14.16

01658500 SOUTH FORK QUANTICO CREEK NEAR INDEPENDENT HILL, VA

LOCATION.--Lat 38°35'14", long 77°25'44", Prince William County, Hydrologic Unit 02070011, on left bank at upstream side of bridge on State Highway 619, 3.4 mi (5.5 km) south of Independent Hill, 5.6 mi (9.0 km) west of Dumfries, and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--7.64 mi² (19.79 km²).

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 238.88 ft (72.811 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Nov. 27 to Dec. 30, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 6.85 ft³/s (0.194 m³/s), 12.18 in/yr (309 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s (112 m³/s) June 21, 1972, gage height, 11.35 ft (3.459 m); no flow at times in 1954, 1957, 1962-66.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 190 ft³/s (5.38 m³/s) June 13, gage height, 5.05 ft (1.539 m), no peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.07 ft³/s (0.002 m³/s) Sept. 18, 19, 20, gage height, 1.93 ft (0.588 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.64	.50	16	29	6.8	7.7	6.4	4.9	1.6	1.7	.11
2	.19	.52	1.0	7.2	14	7.8	5.3	5.2	8.7	1.1	.80	.15
3	.18	.45	.90	4.5	32	6.1	8.0	4.4	4.5	1.4	1.1	.12
4	.17	.45	.84	23	28	4.8	7.1	3.5	19	2.9	1.1	.10
5	.17	.45	.90	11	14	4.6	4.8	3.2	60	2.4	.90	.10
6	.14	.92	.80	5.3	9.4	4.0	5.6	3.2	19	1.5	2.2	.10
7	.18	.79	.70	4.4	6.2	14	4.6	2.9	9.8	1.0	2.8	.09
8	.10	.66	.60	3.6	5.0	16	4.1	3.0	4.6	11	1.2	.12
9	.08	.55	.52	3.2	9.4	8.5	5.0	2.8	3.4	7.4	1.1	.16
10	.08	.51	.50	2.6	9.4	6.3	6.0	2.3	10	2.2	1.1	.16
11	.08	.45	.49	1.8	6.2	5.7	5.0	2.1	8.4	1.4	1.7	.13
12	.12	.45	.49	1.6	5.0	11	4.5	2.0	5.7	1.1	2.0	.10
13	.30	.45	.48	1.5	4.8	8.3	4.0	1.9	95	.90	1.6	.11
14	.38	.45	.80	1.7	4.7	6.6	3.7	1.7	29	.80	1.7	.12
15	.48	.45	7.0	1.8	5.0	12	3.5	1.6	9.7	.70	1.7	.13
16	.57	.45	6.4	1.7	6.0	21	3.2	1.5	5.5	.60	1.6	.12
17	.65	.45	4.0	1.6	24	21	4.6	1.5	4.5	.52	1.9	.10
18	.33	.45	2.5	1.5	23	10	13	1.5	3.9	.38	2.0	.07
19	.81	.45	1.9	1.5	21	7.9	5.9	2.4	3.6	.38	2.2	.07
20	.99	.52	1.7	1.5	18	17	4.6	3.2	2.7	.60	1.9	.10
21	1.0	.46	1.3	1.9	13	15	4.1	2.4	2.1	.90	1.7	.14
22	.81	.52	1.4	2.0	10	9.2	3.5	5.0	2.3	.70	1.4	.44
23	.88	.52	2.9	2.0	7.4	6.8	3.2	3.9	2.3	5.6	1.6	.17
24	.47	.55	3.0	1.9	6.1	5.9	3.0	2.8	2.3	2.3	1.4	.10
25	.33	.60	2.8	1.7	5.0	5.3	2.8	2.6	2.2	.70	.90	.08
26	2.1	.59	2.8	1.6	4.2	6.2	42	2.3	2.2	.70	.52	.27
27	5.4	.55	2.3	1.7	4.3	5.3	64	2.0	2.2	.70	.27	1.6
28	3.1	.52	1.9	1.8	5.0	4.6	33	2.8	2.2	.80	.32	.60
29	1.3	.50	1.5	1.9	---	4.3	12	24	2.1	.90	.17	.22
30	.88	.47	1.8	1.9	---	4.3	7.9	5.4	1.9	3.0	.10	.27
31	.70	---	1.9	6.1	---	5.3	---	3.1	---	5.3	.15	---
TOTAL	23.14	15.79	56.62	121.5	329.1	271.6	285.7	112.6	333.7	61.48	40.83	6.15
MEAN	.75	.53	1.83	3.92	11.8	8.76	9.52	3.63	11.1	1.98	1.32	.21
MAX	5.4	.92	7.0	23	32	21	64	24	95	11	2.8	1.6
MIN	.08	.45	.48	1.5	4.2	4.0	2.8	1.5	1.9	.38	.10	.07
CFSM	.10	.07	.24	.51	1.55	1.15	1.25	.48	1.45	.26	.17	.03
IN.	.11	.08	.28	.59	1.60	1.32	1.39	.55	1.62	.30	.20	.03

CAL YR 1981 TOTAL 918.30 MEAN 2.52 MAX 26 MIN .08 CFSM .33 IN 4.47
WTR YR 1982 TOTAL 1658.21 MEAN 4.54 MAX 95 MIN .07 CFSM .59 IN 8.07

01660400 AQUIA CREEK NEAR GARRISONVILLE, VA

LOCATION.--Lat 38°29'25", long 77°26'02", Stafford County, Hydrologic Unit 02070011, on right bank at bridge on State Highway 641, 1.1 mi (1.8 km) northwest of Garrisonville, and 3.0 mi (4.8 km) upstream from Beaverdam Run.

DRAINAGE AREA.--34.9 mi^2 (90.4 km^2).

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 120 ft (36.6 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 38.2 ft^3/s (1.082 m^3/s), 14.86 in/yr (377 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft^3/s (329 m^3/s) June 22, 1972, gage height, 16.32 ft (4.974 m), from rating curve extended above 1,600 ft^3/s (45 m^3/s) on basis of contracted-opening measurement of peak flow; no flow Sept. 15-17, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 734 ft^3/s (20.8 m^3/s) at 1900 hours Feb. 3, gage height, 4.00 ft (1.219 m), no other peak above base of 500 ft^3/s (14 m^3/s); minimum, 0.03 ft^3/s (<0.001 m^3/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	7.5	5.3	120	201	39	53	35	22	6.3	13	.74
2	2.0	7.0	11	58	67	45	34	31	23	5.8	7.2	.74
3	1.8	6.9	9.8	38	560	40	39	27	25	5.8	4.9	.66
4	2.7	6.0	8.8	154	194	33	42	24	58	7.2	3.6	.58
5	2.4	6.5	9.6	77	77	31	32	22	225	6.3	2.7	.50
6	2.3	12	8.7	39	55	28	33	20	87	5.8	2.7	.42
7	2.0	10	7.2	28	42	65	30	19	46	4.0	6.7	.42
8	2.1	8.4	6.2	21	34	83	27	19	30	4.0	16	.26
9	2.2	7.3	5.5	18	64	47	33	19	22	4.0	22	.06
10	2.2	7.0	5.4	18	63	37	42	16	24	4.5	9.8	.06
11	2.2	6.6	5.1	18	40	35	33	14	30	4.0	5.8	.26
12	2.1	6.4	5.1	18	33	42	31	13	24	4.5	4.9	.26
13	2.1	6.2	5.0	18	33	40	27	13	228	5.4	4.5	.26
14	2.6	6.0	7.1	19	32	34	26	12	118	5.4	3.6	.34
15	2.7	5.9	97	21	33	40	24	11	49	4.0	2.9	.34
16	2.9	5.7	92	18	39	63	23	11	31	4.0	2.7	.66
17	2.9	5.0	41	16	166	83	25	11	25	2.9	4.0	.74
18	3.4	4.8	27	16	154	52	59	9.8	27	2.4	46	.58
19	4.0	4.8	21	16	146	41	35	9.2	23	2.0	9.8	.50
20	5.9	4.5	17	16	123	69	29	11	19	2.0	5.8	.58
21	4.4	4.9	13	21	82	70	27	11	16	1.6	4.5	.50
22	5.1	4.8	14	18	55	50	26	12	15	1.1	3.1	5.8
23	8.6	4.5	35	19	42	39	22	16	17	1.6	2.9	4.9
24	7.5	4.4	38	19	37	35	20	16	12	17	2.0	2.0
25	7.3	5.3	34	17	32	32	20	16	10	8.7	1.8	1.3
26	57	5.6	34	15	28	35	60	14	9.2	4.5	.82	2.2
27	97	5.7	25	16	29	31	216	12	9.2	2.4	1.1	33
28	51	5.2	19	17	33	27	152	15	10	2.0	1.1	16
29	19	4.9	16	18	---	26	64	123	8.1	1.3	.90	7.6
30	12	4.8	12	18	---	26	44	44	7.6	2.4	.90	4.0
31	9.6	---	12	46	---	27	---	26	---	10	.82	---
TOTAL	331.2	184.6	646.8	971	2494	1345	1328	652.0	1250.1	142.9	198.54	86.26
MEAN	10.7	6.15	20.9	31.3	89.1	43.4	44.3	21.0	41.7	4.61	6.40	2.88
MAX	97	12	97	154	560	83	216	123	228	17	46	33
MIN	1.8	4.4	5.0	15	28	26	20	9.2	7.6	1.1	.82	.06
CFSM	.31	.18	.60	.90	2.55	1.24	1.27	.60	1.20	.13	.18	.08
IN.	.35	.20	.69	1.03	2.66	1.43	1.42	.69	1.33	.15	.21	.09

CAL YR 1981 TOTAL 5234.07 MEAN 14.3 MAX 469 MIN .76 CFSM .41 IN 5.58
WTR YR 1982 TOTAL 9630.40 MEAN 26.4 MAX 560 MIN .06 CFSM .76 IN 10.26

01661800 BUSH MILL STREAM NEAR HEATHSVILLE, VA

LOCATION.--Lat 37°52'36", long 76°29'42", Northumberland County, Hydrologic Unit 02080102, on right bank 12 ft (4 m) upstream from bridge on State Highway 601, 2.2 mi (3.5 km) northwest of Howland, 3.0 mi (4.8 km) southwest of Heathsville, and 3.5 mi (5.6 km) upstream from mouth.

DRAINAGE AREA.--6.82 mi^2 (17.66 km^2).

PERIOD OF RECORD.--October 1963 to March 1969, October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 23.78 ft (7.248 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 19, 1969, 52 ft (16 m) downstream at datum 0.74 ft (0.226 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--18 years (water years 1964-68, 1979-82), 7.38 ft^3/s (0.209 m^3/s), 14.70 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 714 ft^3/s (20.2 m^3/s) July 30, 1979, gage height, 8.52 ft (2.597 m), from rating curve extended above 130 ft^3/s (3.7 m^3/s); no flow many days in August and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 20, 1969, reached a stage of 6.13 ft (1.868 m), present datum, from floodmarks, discharge, about 450 ft^3/s (13 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft^3/s (2.07 m^3/s) Aug. 7, gage height, 4.51 ft (1.375 m), no peak above base of 100 ft^3/s (2.8 m^3/s); minimum, 0.16 ft^3/s (0.005 m^3/s) July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	1.9	1.7	20	14	8.7	7.2	4.9	14	.95	5.6	.82
2	.62	2.0	2.3	6.7	5.8	9.3	5.2	4.7	25	.74	1.8	.78
3	.47	1.9	2.1	6.1	19	8.8	6.4	4.0	4.1	.66	1.1	.70
4	.50	1.9	2.0	13	9.2	6.3	7.8	3.8	38	.54	.82	.62
5	.47	2.0	2.2	7.1	5.5	6.5	5.1	3.6	22	.47	.74	.62
6	.51	4.4	1.9	4.5	4.5	7.8	6.7	3.5	12	.38	.90	.70
7	.56	2.7	1.6	4.0	3.8	25	5.1	3.3	6.3	.35	33	.64
8	.46	2.0	1.5	3.7	3.6	23	4.9	3.3	4.8	.29	16	.63
9	.49	2.0	1.4	3.3	4.1	11	9.5	3.2	3.9	.41	20	.67
10	.62	1.8	1.4	2.8	4.9	8.4	7.4	2.7	3.5	5.6	17	.62
11	.69	1.8	1.4	2.2	3.5	7.6	5.5	2.5	2.7	6.8	11	.59
12	.68	1.8	1.4	2.4	3.2	8.0	5.1	2.3	2.3	5.5	9.0	.57
13	.71	1.9	1.3	2.8	3.7	6.6	4.9	2.2	5.2	6.7	3.9	.61
14	.77	1.8	2.4	4.4	4.7	5.8	4.6	2.1	5.3	1.7	2.5	.63
15	.78	2.0	21	6.0	7.1	13	4.4	2.1	2.7	1.5	1.8	.61
16	.86	2.0	17	5.6	10	16	4.4	1.9	2.0	1.2	1.4	.60
17	.90	3.7	5.5	6.2	18	10	4.6	1.8	1.8	.66	1.3	.56
18	1.0	3.7	3.7	5.6	19	7.6	14	1.7	2.1	.38	2.4	.52
19	1.4	2.4	2.8	4.9	12	6.7	6.5	3.3	1.8	.29	1.4	.49
20	1.4	2.1	2.2	4.6	8.5	11	5.6	5.2	1.9	8.6	.95	1.9
21	1.6	1.9	2.0	4.8	7.5	19	5.4	2.8	1.5	1.6	.86	1.4
22	1.7	1.9	4.6	4.9	5.7	11	5.0	2.4	1.3	.58	.74	2.9
23	1.9	1.7	4.8	16	4.8	7.7	4.7	2.6	1.2	1.2	11	1.9
24	3.1	1.8	2.9	17	4.3	6.8	4.6	2.7	1.2	1.7	5.3	1.2
25	5.8	1.9	6.6	8.2	3.9	6.4	4.4	3.0	1.1	.66	1.8	1.1
26	4.8	1.7	5.3	5.6	3.6	6.1	6.2	2.5	1.0	.50	1.0	4.0
27	2.4	1.8	3.8	4.8	4.0	5.6	8.2	2.2	1.0	.38	.86	17
28	2.3	1.7	3.3	4.6	9.4	5.2	11	2.1	.95	5.8	2.6	3.5
29	2.0	1.6	2.7	4.9	---	5.2	6.3	5.3	.90	4.8	1.3	2.1
30	1.8	1.6	2.4	5.8	---	5.2	5.4	6.2	.90	7.8	.86	2.0
31	1.9	---	3.1	12	---	5.5	---	3.1	---	21	.82	---
TOTAL	43.63	63.4	118.3	204.5	207.3	290.8	186.1	97.0	172.45	89.74	159.75	50.98
MEAN	1.41	2.11	3.82	6.60	7.40	9.38	6.20	3.13	5.75	2.89	5.15	1.70
MAX	5.8	4.4	21	20	19	25	14	6.2	38	21	33	17
MIN	.44	1.6	1.3	2.2	3.2	5.2	4.4	1.7	.90	.29	.74	.49
CFSM	.21	.31	.56	.97	1.09	1.38	.91	.46	.84	.42	.76	.25
IN.	.24	.35	.65	1.12	1.13	1.59	1.01	.53	.94	.49	.87	.28

CAL YR 1981 TOTAL 1044.63 MEAN 2.86 MAX 28 MIN .23 CFSM .42 IN 5.70
WTR YR 1982 TOTAL 1683.95 MEAN 4.61 MAX 38 MIN .29 CFSM .68 IN 9.18

01661900 CARTER RUN NEAR MARSHALL, VA

LOCATION.--Lat 38°47'57", long 77°52'09", Fauquier County, Hydrologic Unit 02080103, on left bank 50 ft (15 m) upstream from farm road, 1.2 mi (1.9 km) downstream from Horner Run, 4.7 mi (7.6 km) south of Marshall, 6.7 mi (10.8 km) southwest of The Plains, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--19.5 mi^2 (50.5 km^2).

PERIOD OF RECORD.--October 1976 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 388.39 ft (118.381 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 200 ft^3/s (5.7 m^3/s), which are poor. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--6 years, 24.4 ft^3/s (0.691 m^3/s), 16.99 in/yr (432 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft^3/s (201 m^3/s) Oct. 9, 1976, gage height, 10.4 ft (3.17 m), from floodmarks, from rating curve extended above 190 ft^3/s (5.4 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.48 ft^3/s (0.014 m^3/s) Aug. 11, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 1	0500	240	6.80	4.43	1.350
Feb. 3	1330	617	17.5	5.59	1.704
June 5	1400	381	10.8	4.97	1.515
June 13	1500	*751	21.3	5.85	1.783

Minimum discharge, 2.0 ft^3/s (0.057 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	6.0	5.1	29	131	24	19	23	16	12	5.5	2.5
2	2.8	5.7	7.5	24	38	22	27	19	16	11	4.6	10
3	2.4	5.5	6.3	16	326	20	24	16	25	11	4.1	7.9
4	2.2	5.0	5.6	39	115	18	21	14	54	12	3.5	3.8
5	2.3	5.1	5.5	30	59	17	19	13	188	11	5.5	3.4
6	2.4	7.0	5.0	21	39	15	17	11	88	8.9	50	3.1
7	3.1	6.8	4.6	15	29	36	17	11	51	7.9	20	3.1
8	2.7	6.0	4.9	12	24	38	24	13	35	7.2	11	3.1
9	2.3	5.0	4.6	9.0	50	29	19	14	28	7.4	10	3.1
10	2.3	5.4	5.6	7.5	41	25	17	10	43	12	7.9	3.1
11	2.5	5.0	4.3	5.6	29	25	16	9.3	33	19	5.9	3.0
12	2.5	4.9	4.0	5.2	24	34	16	8.4	27	9.8	11	2.9
13	2.5	4.8	3.8	5.5	23	28	15	7.8	296	7.8	5.9	2.8
14	2.9	4.5	4.6	6.8	20	25	14	7.3	119	25	5.5	2.7
15	2.9	4.9	17	7.5	18	26	13	6.5	60	15	5.2	2.7
16	2.9	4.6	13	15	26	43	12	6.6	42	8.9	5.9	2.7
17	2.9	4.6	9.4	15	76	61	14	5.9	42	7.4	10	2.7
18	2.7	5.2	8.4	7.3	75	41	21	5.5	34	6.2	5.9	2.7
19	3.1	4.5	6.2	5.0	71	34	15	5.8	29	9.4	5.2	2.6
20	3.3	4.7	5.5	4.7	85	60	13	6.5	25	10	4.3	4.0
21	3.3	4.6	4.3	4.6	85	80	11	19	21	6.6	4.6	4.4
22	3.5	4.5	5.2	4.6	61	62	10	33	19	4.9	4.3	5.8
23	5.2	4.1	13	4.8	47	45	9.2	19	19	5.9	4.1	5.4
24	6.6	4.5	14	6.0	37	36	8.6	16	15	5.5	3.8	4.5
25	4.3	4.9	11	5.7	30	32	11	16	14	4.3	3.5	4.1
26	10	4.9	9.4	5.4	25	29	40	13	14	4.3	2.7	6.6
27	33	4.9	8.4	5.5	24	25	70	12	13	4.1	2.7	26
28	31	4.9	7.9	6.2	25	23	50	25	12	4.1	2.7	8.4
29	11	4.6	7.0	6.2	---	20	31	39	18	4.6	2.7	5.5
30	7.9	4.3	6.2	6.6	---	21	26	23	21	4.3	2.5	4.3
31	6.5	---	5.5	50	---	25	---	15	---	6.6	2.5	---
TOTAL	175.2	151.4	222.8	385.7	1633	1019	619.8	443.6	1417	274.1	223.0	146.9
MEAN	5.65	5.05	7.19	12.4	58.3	32.9	20.7	14.3	47.2	8.84	7.19	4.90
MAX	33	7.0	17	50	326	80	70	39	296	25	50	26
MIN	2.2	4.1	3.8	4.6	18	15	8.6	5.5	12	4.1	2.5	2.5
CFSM	.29	.26	.37	.64	2.99	1.69	1.06	.73	2.42	.45	.37	.25
IN.	.33	.29	.43	.74	3.12	1.94	1.18	.85	2.70	.52	.43	.28

CAL YR 1981 TOTAL 3425.3 MEAN 9.38 MAX 200 MIN 1.4 CFSM .48 IN 6.53
WTR YR 1982 TOTAL 6711.5 MEAN 18.4 MAX 326 MIN 2.2 CFSM .94 IN 12.80

01662000 RAPPAHANNOCK RIVER NEAR WARRENTON, VA

LOCATION.--Lat 38°41'05", long 77°54'15", Fauquier County, Hydrologic Unit 02080103, on left bank 50 ft (20 m) downstream from westbound bridge on U.S. Highway 211, 0.9 mi (1.4 km) downstream from Carter Run, 6.2 mi (10.0 km) southwest of Warrenton, 15 mi (24 km) upstream from Hazel River, and at mile 53.0 (85.3 km).

DRAINAGE AREA.--195 mi² (505 km²).

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.57 ft (95.271 m) National Geodetic Vertical Datum of 1929. Oct. 8, 1942, to Dec. 17, 1944, nonrecording gage 50 ft (20 m) upstream at present datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 194 ft³/s (5.494 m³/s), 13.51 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft³/s (906 m³/s) Oct. 15, 1942, gage height, 23.5 ft (7.16 m), from floodmark, from rating curve extended above 24,000 ft³/s (680 m³/s); minimum daily, 0.70 ft³/s (0.020 m³/s) Oct. 4, 5, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2130	2110	59.8	8.03	2.448	June 13	1800	*2230	63.2	8.29	2.527
June 5	1700	1960	55.5	7.70	2.347						

Minimum daily discharge, 7.0 ft³/s (0.20 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	58	31	124	827	235	267	225	186	103	51	17
2	10	50	45	194	419	218	205	204	222	88	37	21
3	8.5	47	51	137	1260	200	224	180	165	86	33	49
4	7.5	44	44	202	942	183	288	163	605	113	32	27
5	8.0	41	40	264	511	176	211	151	1220	99	30	19
6	7.5	45	40	178	360	162	210	144	923	87	480	16
7	8.0	52	39	145	273	234	185	136	584	77	241	14
8	7.5	43	34	120	223	355	172	142	420	73	108	14
9	7.0	38	34	103	364	273	191	205	319	139	99	15
10	8.0	36	91	74	381	241	204	135	358	124	120	16
11	8.0	36	113	86	269	225	185	117	355	153	74	17
12	8.0	34	43	73	220	298	170	107	278	101	80	15
13	8.0	33	38	74	207	275	161	101	1190	90	66	13
14	9.2	32	36	79	180	253	155	94	1090	85	51	12
15	8.0	32	92	81	180	262	144	85	612	116	45	11
16	8.4	32	112	75	212	396	138	81	446	78	41	12
17	8.4	31	82	68	565	578	140	79	400	67	43	12
18	8.8	32	74	58	643	449	160	73	431	59	57	10
19	9.4	31	74	59	531	379	136	70	301	54	41	9.9
20	9.2	31	99	60	635	523	126	72	246	62	32	15
21	9.2	30	86	63	668	682	126	90	208	55	32	20
22	9.9	29	62	67	554	596	117	149	184	47	32	22
23	13	28	62	63	429	467	109	134	180	47	28	26
24	26	29	92	70	360	395	107	115	154	58	28	20
25	22	32	86	72	305	345	107	110	140	45	27	17
26	30	33	73	65	253	319	266	101	150	38	22	18
27	174	34	68	59	238	274	407	90	130	33	20	141
28	377	33	61	53	234	240	438	178	122	31	20	71
29	142	32	59	58	---	224	303	244	113	33	21	37
30	90	32	54	60	---	213	252	230	129	37	18	27
31	70	---	63	73	---	214	---	147	---	49	16	---
TOTAL	1130.5	1090	1978	2957	12243	9884	5904	4152	11861	2327	2025	733.9
MEAN	36.5	36.3	63.8	95.4	437	319	197	134	395	75.1	65.3	24.5
MAX	377	58	113	264	1260	682	438	244	1220	153	480	141
MIN	7.0	28	31	53	180	162	107	70	113	31	16	9.9
CFSM	.19	.19	.33	.49	2.24	1.64	1.01	.69	2.03	.39	.34	.13
IN.	.22	.21	.38	.56	2.34	1.89	1.13	.79	2.26	.44	.39	.14

CAL YR 1981 TOTAL 27862.8 MEAN 76.3 MAX 960 MIN 3.0 CFSM .39 IN 5.32
WTR YR 1982 TOTAL 56285.4 MEAN 154 MAX 1260 MIN 7.0 CFSM .79 IN 10.74

01662800 BATTLE RUN NEAR LAUREL MILLS, VA

LOCATION.--Lat 38°39'20", long 78°04'27", Rappahannock County, Hydrologic Unit 02080103, on left bank just upstream from bridge on State Highway 729, 0.8 mi (1.3 km) upstream from mouth, and 1.0 mi (1.6 km) northeast of Laurel Mills.

DRAINAGE AREA.--27.6 mi² (71.5 km²).

PERIOD OF RECORD.--April 1958 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 374.62 ft (114.184 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 7 to Feb. 23, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--24 years, 26.1 ft³/s (0.739 m³/s), 12.84 in/yr (326 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,120 ft³/s (258 m³/s) Oct. 9, 1976, gage height, 13.90 ft (4.237 m), from floodmark, from rating curve extended above 2,500 ft³/s (71 m³/s) on basis of velocity-area study; no flow many days in September 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 310 ft³/s (8.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 3	2130	460	13.0	5.45	1.661	June 13	1300	410	11.6	5.24	1.597
June 5	1030	*634	18.0	6.08	1.853						

Minimum discharge, 0.52 ft³/s (0.015 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.72	6.1	5.0	21	110	27	27	24	43	14	7.7	3.4
2	.99	5.7	7.3	21	90	26	23	22	33	13	6.7	5.2
3	1.1	5.4	5.6	15	160	24	31	21	84	13	7.5	7.1
4	.78	5.0	5.1	25	90	22	28	19	82	16	5.8	3.4
5	.76	4.8	5.2	20	50	21	24	18	270	13	6.4	3.0
6	.94	7.4	4.6	16	35	20	25	17	111	12	60	2.8
7	1.2	5.7	4.5	14	30	34	22	16	68	10	21	2.7
8	1.3	5.1	4.8	12	26	35	22	21	48	16	15	3.3
9	1.3	4.8	4.7	11	40	30	25	20	38	23	14	3.6
10	1.5	4.7	4.8	10	42	28	23	15	42	17	12	3.4
11	1.4	4.6	4.6	8.0	35	27	21	14	35	14	9.1	3.2
12	1.6	4.5	4.7	7.6	28	32	20	13	32	12	8.9	2.8
13	1.7	4.1	4.6	8.8	23	28	20	12	208	17	7.9	2.5
14	2.1	4.0	5.5	9.8	21	26	19	11	117	11	7.4	2.4
15	2.5	4.1	15	9.4	21	33	18	9.9	73	12	6.2	2.6
16	2.8	3.9	13	9.0	23	51	17	9.4	53	11	7.1	3.1
17	2.9	3.9	10	8.5	70	60	18	9.0	64	11	7.4	2.4
18	3.1	3.9	9.0	8.0	80	48	19	8.4	52	9.3	8.7	2.2
19	3.3	3.6	8.4	8.0	66	42	17	10	39	11	5.6	2.2
20	3.6	3.7	6.9	8.0	70	82	16	10	32	12	4.6	6.2
21	4.1	3.7	5.8	9.0	66	79	16	9.6	28	8.9	5.0	4.1
22	4.4	3.5	7.2	9.0	54	60	15	12	25	7.7	4.2	5.0
23	6.1	3.5	9.7	11	48	49	15	14	23	10	4.2	3.9
24	9.2	4.2	9.3	10	40	42	15	11	21	9.1	4.5	3.1
25	5.5	4.8	8.2	9.0	33	37	14	11	20	7.3	3.8	3.1
26	11	4.7	7.8	8.0	28	34	37	10	28	6.7	3.3	8.7
27	50	4.8	7.8	7.6	28	30	37	9.7	20	6.2	3.8	23
28	28	4.5	7.4	7.4	28	27	34	22	18	6.3	4.4	6.8
29	12	4.1	7.4	7.4	---	26	28	18	17	6.4	3.2	5.1
30	8.7	4.0	6.9	8.0	---	25	26	20	16	8.9	3.2	4.5
31	7.2	---	7.2	15	---	26	---	13	---	11	3.5	---
TOTAL	181.79	136.8	218.0	351.5	1435	1131	672	450.0	1740	355.8	272.1	134.8
MEAN	5.86	4.56	7.03	11.3	51.3	36.5	22.4	14.5	58.0	11.5	8.78	4.49
MAX	50	7.4	15	25	160	82	37	24	270	23	60	23
MIN	.72	3.5	4.5	7.4	21	20	14	8.4	16	6.2	3.2	2.2
CFSM	.21	.17	.26	.41	1.86	1.32	.81	.53	2.10	.42	.32	.16
IN.	.25	.18	.29	.47	1.93	1.52	.91	.61	2.35	.48	.37	.18

CAL YR 1981 TOTAL 3315.84 MEAN 9.08 MAX 155 MIN .08 CFSM .33 IN 4.47
WTR YR 1982 TOTAL 7078.79 MEAN 19.4 MAX 270 MIN .72 CFSM .70 IN 9.54

01663500 HAZEL RIVER AT RIXEYVILLE, VA

LOCATION.--Lat 38°35'30", long 77°57'55", Culpeper County, Hydrologic Unit 02080103, on right bank at downstream side of bridge on State Highway 229, 0.4 mi (0.6 km) upstream from Waterford Run, 1.1 mi (1.8 km) northeast of Rixeyville, 2.8 mi (4.5 km) downstream from Thornton River, and 9.1 mi (14.6 km) upstream from mouth.

DRAINAGE AREA.--287 mi^2 (743 km^2).

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1622: 1957-58. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 288.30 ft (87.874 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 339 ft^3/s (9.600 m^3/s), 16.04 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,000 ft^3/s (1,700 m^3/s) Oct. 15, 1942, gage height, 31.8 ft (9.69 m), from rating curve extended above 27,000 ft^3/s (760 m^3/s); minimum, 1.1 ft^3/s (0.031 m^3/s) Sept. 10-13, 1966, gage height, 1.69 ft (0.515 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 26, 1937, reached a stage of 28.4 ft (8.66 m), from floodmarks, discharge, 43,500 ft^3/s (1,230 m^3/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,300 ft^3/s (93 m^3/s) and maximum (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)	Date	Time	(ft^3/s)	(m^3/s)	(ft)	(m)
Feb. 1	1500	3500	99.1	10.87	3.313	June 13	1730	*4420	125	12.22	3.725
June 5	1600	3520	99.7	10.90	3.322						

Minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Oct. 8, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	143	64	208	1950	389	368	378	375	175	152	50
2	19	126	85	352	1890	384	306	338	778	157	114	51
3	17	115	90	267	2320	362	333	305	502	150	165	57
4	18	104	83	336	1300	329	426	280	985	175	132	55
5	19	98	79	456	783	312	323	258	2110	172	131	42
6	17	106	76	361	593	293	320	243	1500	156	1230	38
7	19	107	70	309	466	380	290	232	989	141	657	37
8	15	94	68	264	382	557	275	237	739	130	322	41
9	16	87	67	223	534	442	290	260	573	157	334	51
10	15	84	60	162	578	404	294	210	594	225	252	49
11	15	80	63	190	438	383	268	191	573	177	183	48
12	16	77	66	165	374	441	255	180	472	151	166	44
13	17	75	64	160	349	419	249	172	2300	153	141	39
14	18	75	67	175	316	397	242	164	1660	136	125	35
15	18	71	141	180	292	406	228	153	998	132	117	34
16	18	71	177	165	311	529	222	144	735	127	104	36
17	19	70	150	150	934	715	225	139	614	120	100	35
18	19	70	128	125	1100	628	243	132	689	117	109	31
19	19	67	115	135	861	565	218	127	497	106	93	28
20	20	66	121	130	966	954	208	133	405	146	81	32
21	21	66	128	140	941	1060	207	126	340	131	81	53
22	22	63	109	150	812	855	196	177	300	105	81	54
23	24	61	110	140	672	705	186	169	280	196	75	55
24	35	62	153	150	584	605	182	175	248	487	73	48
25	46	67	148	160	510	530	180	160	230	163	72	41
26	57	68	133	145	437	493	359	153	243	126	62	43
27	579	70	121	130	409	428	589	143	221	107	56	307
28	880	68	115	120	402	375	700	520	208	97	57	143
29	336	66	109	130	---	348	507	464	193	96	56	83
30	222	63	98	130	---	326	431	571	194	100	49	63
31	171	---	90	160	---	321	---	372	---	141	49	---
TOTAL	2745	2440	3148	6068	21504	15335	9120	7306	20545	4752	5419	1723
MEAN	88.5	81.3	102	196	768	495	304	236	685	153	175	57.4
MAX	880	143	177	456	2320	1060	700	571	2300	487	1230	307
MIN	15	61	60	120	292	293	180	126	193	96	49	28
CFSM	.31	.28	.36	.68	2.68	1.73	1.06	.82	2.39	.53	.61	.20
IN.	.36	.32	.41	.79	2.79	1.99	1.18	.95	2.66	.62	.70	.22

CAL YR 1981 TOTAL 47085 MEAN 129 MAX 1530 MIN 12 CFSM .45 IN 6.10
WTR YR 1982 TOTAL 100105 MEAN 274 MAX 2320 MIN 15 CFSM .96 IN 12.98

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA

LOCATION.--Lat 38°31'50", long 77°48'50", Fauquier County, Hydrologic Unit 02080103, on left bank 80 ft (20 m) upstream from bridge on alternate U.S. Highway 29, at Remington, 0.3 mi (0.5 km) upstream from Tinpot Run, 0.4 mi (0.6 km) downstream from Ruffans Run, 2.5 mi (4.0 km) downstream from Hazel River, and at mile 35.2 (56.6 km).

DRAINAGE AREA.--620 mi² (1,606 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.53 ft (76.971 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1951, nonrecording gage at bridge 80 ft (20 m) downstream at same datum.

REMARKS.--Records good. Gage-height telemeter at station.

AVERAGE DISCHARGE.--40 years, 674 ft³/s (19.09 m³/s), 14.76 in/yr (375 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s (2,550 m³/s) Oct. 16, 1942, gage height, 30.0 ft (9.14 m), from floodmarks, from rating curve extended above 43,000 ft³/s (1,200 m³/s) on basis of slope-area determination of peak flow; minimum, 2.8 ft³/s (0.079 m³/s) Sept. 13, 1966, gage height, 2.31 ft (0.704 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1828, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1945	7770	220	12.77	3.892	June 14	0030	8550	242	13.36	4.072
June 5	2030	6680	189	11.79	3.594	Aug. 6	2000	*9230	261	13.86	4.225

Minimum discharge, 30 ft³/s (0.85 m³/s) Oct. 9, 10, 11, gage height, 2.78 ft (0.847 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	254	119	449	2110	827	824	786	600	383	309	103
2	38	222	148	691	2530	819	685	705	1240	330	228	103
3	36	200	179	539	5360	765	676	625	864	309	235	115
4	34	185	167	686	4230	683	956	562	2170	354	255	143
5	36	174	158	896	1890	639	719	511	4100	376	226	101
6	35	178	148	667	1350	596	672	475	3680	334	3290	86
7	37	189	141	547	1060	808	632	455	1980	298	2470	79
8	35	171	134	464	853	1310	573	442	1450	276	770	77
9	31	154	126	389	1120	991	592	547	1130	346	696	85
10	31	148	160	280	1400	877	652	442	1200	483	547	91
11	31	142	139	320	992	817	581	380	1300	530	430	88
12	33	139	123	222	828	936	552	353	1020	369	361	84
13	36	134	115	275	748	938	523	340	4050	336	335	76
14	37	130	111	297	686	855	506	320	4920	305	275	68
15	38	127	325	306	626	840	475	299	2160	329	247	63
16	37	126	534	284	700	1140	459	280	1550	303	225	63
17	37	126	340	254	2150	1600	457	270	1300	264	211	64
18	42	128	277	211	2900	1360	514	258	1460	248	241	60
19	39	124	207	222	1940	1180	472	245	1090	222	219	53
20	39	121	207	225	2230	1680	434	249	892	250	183	52
21	42	120	195	236	2120	2240	426	246	749	262	175	75
22	52	116	221	248	1730	1840	407	350	660	215	175	103
23	46	112	269	237	1380	1430	379	402	618	360	167	111
24	80	114	319	259	1180	1220	365	378	546	769	158	98
25	96	121	336	267	1040	1080	362	341	493	328	157	82
26	104	127	296	246	893	1000	587	331	492	231	141	77
27	520	130	268	220	830	897	1410	303	483	196	122	394
28	1580	128	250	206	827	795	1620	603	437	175	119	401
29	668	122	230	218	---	731	1090	891	407	168	118	186
30	396	119	206	221	---	687	895	973	411	192	110	131
31	310	---	228	271	---	676	---	695	---	270	104	---
TOTAL	4613	4381	6676	10853	45703	32257	19495	14057	43452	9811	13299	3312
MEAN	149	146	215	350	1632	1041	650	453	1448	316	429	110
MAX	1580	254	534	896	5360	2240	1620	973	4920	769	3290	401
MIN	31	112	111	206	626	596	362	245	407	168	104	52
CFSM	.24	.24	.35	.57	2.63	1.68	1.05	.73	2.34	.51	.69	.18
IN.	.28	.26	.40	.65	2.74	1.94	1.17	.84	2.61	.59	.80	.20

CAL YR 1981 TOTAL 93385 MEAN 256 MAX 2850 MIN 16 CFSM .41 IN 5.60
WTR YR 1982 TOTAL 207909 MEAN 570 MAX 5360 MIN 31 CFSM .92 IN 12.47

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1951 to September 1956, October 1965 to current year.
WATER TEMPERATURES: May 1951 to September 1956, October 1965 to September 1976, October 1977 to current year.
SUSPENDED-SEDIMENT DISCHARGE: April 1951 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 150 micromhos Sept. 3, 1974; minimum daily, 24 micromhos July 6, 1975.
WATER TEMPERATURES: Maximum, 32.5°C July 19, 1980, July 18, 21, 1981; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,870 mg/L June 13, 1982; minimum daily mean, 1 mg/L on many days during each year.
SEDIMENT LOADS: Maximum daily, 55,600 tons (50,400 tonnes) Sept. 26, 1975; minimum daily, 0.08 ton (0.07 tonne) Oct. 9, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 118 micromhos Oct. 8; minimum daily, 50 micromhos Aug. 6.
WATER TEMPERATURES: Maximum daily, 29.0°C Aug. 27; minimum observed, 0.5°C Dec. 9, 10.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,870 mg/L June 13; minimum daily mean, 1 mg/L Oct. 3-9, Aug. 30.
SEDIMENT LOADS: Maximum daily, 28,800 tons (26,100 tonnes) June 13; minimum daily, 0.08 ton (0.07 tonne) Oct. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
NOV 19...	1245	123	83	7.2	9.0	5	27	7.0	2.3	5.7	1.5
JAN 20...	1100	226	88	6.8	1.0	5	25	6.7	2.1	4.2	1.1
MAR 08...	1200	1390	78	7.3	4.0	15	24	6.2	2.0	3.5	1.3
APR 14...	1000	506	73	6.8	12.0	2	22	5.8	1.9	4.6	.8
MAY 27...	1000	300	74	7.2	19.5	<1	25	6.6	2.1	3.6	1.5
JUL 15...	1045	357	78	7.4	23.5	7	27	7.1	2.2	4.0	1.3
SEP 09...	1050	80	83	7.5	20.0	16	28	7.4	2.3	4.2	1.9

< Actual value is known to be less than the value shown.

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 19...	23	5.4	5.0	<.1	11	57	52	<.010	.22	<.010	260
JAN 20...	21	6.6	6.0	<.1	12	58	51	<.010	.79	<.010	110
MAR 08...	14	9.0	5.6	<.1	10	54	46	<.010	.95	<.010	140
APR 14...	14	7.0	3.9	<.1	9.4	44	44	<.010	.42	<.010	140
MAY 27...	23	5.0	3.9	<.1	13	55	50	.050	.68	.040	240
JUL 15...	25	5.0	4.1	<.1	9.7	60	49	<.010	.50	.010	120
SEP 09...	28	5.0	4.7	.2	7.9	--	51	<.010	.25	<.010	90

< Actual value is known to be less than the value shown.

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C). WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	86	82	72	---	67	62	75	68	77	80	68
2	100	86	82	71	---	67	62	73	64	75	80	70
3	101	84	82	76	63	67	62	76	62	75	80	78
4	103	82	75	80	66	66	74	76	65	70	85	70
5	108	82	80	81	66	66	70	76	80	70	80	70
6	102	82	76	66	73	78	67	79	80	63	50	68
7	105	82	75	66	74	78	73	80	83	73	80	68
8	118	82	78	66	66	70	75	81	72	70	80	70
9	104	83	79	66	71	66	66	81	71	70	80	75
10	84	81	78	65	63	68	74	67	76	80	70	70
11	84	77	78	65	79	64	72	67	76	73	88	73
12	84	78	78	65	75	66	63	67	65	75	85	74
13	84	87	77	64	71	65	63	68	70	85	85	74
14	83	77	73	64	63	65	63	67	78	80	83	74
15	104	76	72	65	64	65	73	68	71	77	80	73
16	104	76	71	---	71	65	74	68	71	75	80	74
17	94	76	71	---	68	66	64	69	76	73	80	88
18	82	76	72	---	72	60	64	72	77	70	80	93
19	99	76	73	---	66	60	63	68	77	80	73	91
20	84	63	72	---	66	62	65	68	78	77	75	93
21	86	74	71	---	66	62	67	68	79	75	75	73
22	85	63	71	---	66	62	68	67	78	80	73	80
23	82	63	71	---	69	63	66	71	76	80	70	73
24	84	71	71	---	69	61	67	79	75	80	70	72
25	84	80	72	---	60	61	66	80	70	75	70	79
26	83	81	68	---	60	60	68	77	80	77	63	73
27	91	82	66	---	66	61	68	77	80	80	70	73
28	99	87	68	---	66	61	68	77	75	75	68	75
29	96	90	68	---	---	61	67	77	77	70	70	78
30	77	82	67	---	---	62	67	72	80	73	70	73
31	89	---	66	---	---	62	---	70	---	77	63	---
MEAN	93	79	74	69	68	65	67	73	74	75	75	75

WTR YR 1982 MEAN 74 MAX 118 MIN 50

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	15.0	5.0	6.0	---	4.0	9.0	21.5	19.0	27.0	21.5	24.5
2	19.0	16.0	5.0	6.0	---	5.0	8.0	22.5	18.0	28.0	21.5	24.5
3	18.0	15.0	5.0	6.0	2.5	4.5	9.0	20.5	17.0	27.0	22.5	22.5
4	17.0	16.0	6.0	5.0	3.5	4.5	10.5	21.5	18.0	27.5	21.5	23.5
5	15.0	15.0	6.0	6.0	4.5	5.0	10.5	22.5	19.0	25.0	24.5	24.5
6	15.0	14.5	5.0	5.5	3.5	6.0	9.0	23.5	21.5	25.0	22.5	20.5
7	16.0	14.5	1.0	5.5	3.5	5.0	12.5	22.5	20.5	26.0	21.5	20.5
8	17.0	15.0	1.0	6.0	2.5	5.0	11.5	23.5	22.5	27.0	20.5	19.0
9	17.0	16.0	.5	2.0	2.5	7.0	11.5	24.5	19.5	26.0	23.5	18.0
10	18.0	16.0	.5	5.0	3.5	6.0	10.5	24.5	20.0	25.5	23.5	17.0
11	17.0	16.0	1.0	4.5	3.5	4.5	11.5	23.5	20.5	28.0	24.5	16.0
12	17.0	15.0	1.0	5.0	2.5	5.0	11.5	23.5	21.5	27.0	25.5	17.0
13	18.0	16.0	1.0	4.5	3.5	6.0	10.5	24.5	22.5	26.0	22.5	18.0
14	18.0	16.0	8.0	4.5	4.5	6.0	11.5	22.5	22.5	25.0	24.5	15.0
15	17.0	15.0	3.5	3.5	5.0	7.0	11.5	22.5	20.5	24.5	25.0	17.0
16	17.0	14.5	1.5	---	5.0	6.0	14.5	20.5	22.5	23.5	26.0	16.0
17	16.0	15.0	1.5	---	2.5	5.0	14.5	22.5	21.5	22.5	26.0	17.0
18	16.0	---	1.5	---	3.5	6.0	16.0	23.5	22.5	21.5	25.0	18.0
19	15.0	---	2.5	---	5.0	5.0	15.0	23.5	20.5	22.5	26.0	16.0
20	15.0	---	3.5	---	5.0	7.0	15.0	24.5	24.5	23.5	27.0	19.0
21	15.0	6.0	3.5	---	5.0	6.0	16.0	23.5	24.5	24.5	26.0	17.0
22	15.0	5.0	4.5	---	6.0	7.0	17.0	24.5	22.5	23.5	26.0	16.0
23	16.0	5.0	5.0	---	5.0	6.0	24.5	24.5	22.5	24.5	25.0	19.0
24	17.0	5.0	7.0	---	5.0	7.0	16.0	20.5	24.5	22.5	25.0	18.0
25	17.0	5.0	8.0	---	4.5	8.0	18.0	20.5	25.0	23.5	27.0	19.0
26	16.0	5.0	8.0	---	4.5	7.0	19.0	20.5	26.0	22.5	26.0	16.0
27	16.0	6.0	9.0	---	3.5	8.0	21.5	21.5	28.0	23.5	29.0	15.0
28	15.0	6.0	10.5	---	3.5	8.0	22.5	21.5	26.0	24.5	27.0	15.0
29	15.0	5.0	11.0	---	---	9.0	22.5	22.5	25.5	23.5	28.0	16.0
30	16.0	5.0	9.0	---	---	8.0	23.5	23.0	26.0	22.5	27.0	15.0
31	17.0	---	5.0	---	---	9.0	---	25.0	---	24.5	28.0	---
MEAN	16.5	11.5	4.5	5.0	4.0	6.0	14.5	23.0	22.0	25.0	25.0	18.5

WTR YR 1982 MEAN 15.0 MAX 29.0 MIN .5

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	2	.20	17	12	2	.64	41	50	290	1650	7	16
2	2	.21	5	3.0	3	1.2	41	76	380	2600	7	15
3	1	.10	5	2.7	4	1.9	17	25	746	12400	7	14
4	1	.09	3	1.5	3	1.4	30	56	225	2570	8	15
5	1	.10	2	.94	2	.85	60	145	88	449	8	14
6	1	.09	2	.96	3	1.2	48	86	105	383	7	11
7	1	.10	2	1.0	3	1.1	25	37	110	315	24	52
8	1	.09	2	.92	2	.72	9	11	78	180	75	265
9	1	.08	7	2.9	3	1.0	3	3.2	103	311	30	80
10	2	.17	8	3.2	6	2.6	2	1.5	41	155	17	40
11	3	.25	3	1.2	13	4.9	5	4.3	10	27	6	13
12	3	.27	2	.75	9	3.0	7	4.2	11	25	7	18
13	2	.19	3	1.1	5	1.6	5	3.7	6	12	3	7.6
14	2	.20	4	1.4	3	.90	3	2.4	4	7.4	6	14
15	7	.72	4	1.4	4	3.5	4	3.3	11	19	4	9.1
16	8	.80	4	1.4	6	8.7	3	2.3	30	57	37	114
17	9	.90	4	1.4	5	4.6	2	1.4	208	1620	60	259
18	6	.68	6	2.1	10	7.5	2	1.1	301	2460	50	184
19	11	1.2	4	1.3	10	5.6	2	1.2	84	440	40	127
20	5	.53	3	.98	12	6.7	3	1.8	35	211	130	590
21	10	1.1	4	1.3	29	15	3	1.9	26	149	140	847
22	8	1.1	2	.63	16	9.5	3	2.0	17	79	90	447
23	4	.50	2	.60	13	9.4	2	1.3	12	45	75	290
24	3	.65	4	1.2	27	23	3	2.1	10	32	60	198
25	5	1.3	5	1.6	52	47	4	2.9	5	14	50	146
26	6	1.7	4	1.4	10	8.0	4	2.7	4	9.6	50	135
27	67	137	8	2.8	4	2.9	2	1.2	5	11	40	97
28	271	1210	5	1.7	5	3.4	2	1.1	6	13	40	86
29	64	115	3	.99	7	4.3	2	1.2	---	---	38	75
30	33	35	4	1.3	8	4.4	3	1.8	---	---	34	63
31	35	29	---	---	12	7.4	5	3.7	---	---	37	68
TOTAL	---	1539.32	---	55.67	---	193.91	---	538.3	---	26244.0	---	4309.7

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	42	93	35	74	48	78	26	27	8	6.7	6	1.7
2	35	65	30	57	115	385	15	13	9	5.5	3	.83
3	40	73	30	51	55	128	16	13	9	5.7	5	1.6
4	53	137	20	30	743	4900	20	19	23	16	26	10
5	38	74	18	25	1040	15400	22	22	60	37	12	3.3
6	33	60	15	19	1340	13300	15	14	616	6920	7	1.6
7	34	58	15	18	670	3580	13	10	180	1200	9	1.9
8	21	32	18	21	320	1250	10	7.5	40	83	5	1.0
9	22	35	23	34	240	732	22	21	180	338	4	.92
10	25	44	20	24	250	810	30	39	140	207	3	.74
11	24	38	12	12	240	842	29	41	135	157	4	.95
12	20	30	10	9.5	200	551	20	20	82	80	5	1.1
13	20	28	10	9.2	1870	28800	19	17	155	140	5	1.0
14	18	25	8	6.9	1200	15900	15	12	40	30	7	1.3
15	8	10	6	4.8	410	2390	20	18	13	8.7	7	1.2
16	7	8.7	5	3.8	230	963	20	16	5	3.0	6	1.0
17	7	8.6	5	3.6	205	720	17	12	4	2.3	5	.86
18	10	14	5	3.5	235	926	15	10	13	8.5	5	.81
19	4	5.1	6	4.0	185	544	10	6.0	12	7.1	4	.57
20	5	5.9	7	4.7	120	289	13	8.8	10	4.9	3	.42
21	11	13	5	3.3	60	121	14	9.9	9	4.3	4	.81
22	6	6.6	10	9.5	50	89	6	3.5	10	4.7	8	2.2
23	2	2.0	16	17	41	68	61	70	8	3.6	3	.90
24	2	2.0	15	15	30	44	189	444	5	2.1	2	.53
25	2	2.0	10	9.2	27	36	22	19	6	2.5	3	.66
26	30	48	10	8.9	32	43	30	19	6	2.3	6	1.2
27	95	362	8	6.5	29	38	17	9.0	7	2.3	17	18
28	115	503	72	117	26	31	13	6.1	9	2.9	40	43
29	60	177	38	91	25	27	12	5.4	3	.96	11	5.5
30	51	123	110	289	30	33	12	6.2	1	.30	2	.71
31	---	---	88	165	---	---	10	7.3	3	.84	---	---
TOTAL	---	2082.9	---	1146.4	---	93018	---	945.7	---	9287.20	---	106.31

TOTAL LOAD FOR YEAR: 139467.41 TONS.

01665000 MOUNTAIN RUN NEAR CULPEPER, VA

LOCATION.--Lat 38°28'50", long 78°03'10", Culpeper County, Hydrologic Unit 02080103, on left bank 30 ft (9 m) upstream from bridge on State Highway 641, 2.4 mi (3.9 km) upstream from Bond Branch, and 3.0 mi (4.8 km) west of Culpeper.

DRAINAGE AREA.--15.9 mi² (41.2 km²), of which 10.9 mi² (28.2 km²) are above flood-detention structures.

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1332: 1950-51. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.46 ft (118.707 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since 1959 by two reservoirs, combined flood storage, 2,240 acre-ft (2.76 hm³); 531 acre-ft (0.655 hm³) additional storage used for low-water regulation for municipal supply for town of Culpeper. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 16.4 ft³/s (0.464 m³/s), 14.01 in/yr (356 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,440 ft³/s (154 m³/s) Aug. 18, 1955, from rating curve extended above 910 ft³/s (26 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 11.20 ft (3.414 m) Dec. 4, 1950; minimum discharge, 0.09 ft³/s (0.003 m³/s) Sept. 30, Oct. 1, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft³/s)	(m³/s)	(ft)	(m)			(ft³/s)	(m³/s)	(ft)	(m)
Feb. 3	0930	333	9.43	5.17	1.576	June 13	1130	312	8.84	5.04	1.536
May 29	2000	335	9.49	5.18	1.579	Aug. 6	1230	*346	9.80	5.25	1.600

Minimum daily discharge, 2.1 ft³/s (0.059 m³/s) Oct. 5-7, 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	6.5	4.2	20	92	15	17	18	17	6.9	12	3.9
2	2.5	6.3	5.9	15	38	18	13	16	15	6.1	8.3	4.4
3	2.6	5.9	5.3	12	194	17	16	14	22	6.1	12	4.0
4	2.2	5.5	5.1	20	130	15	19	13	67	6.9	9.1	3.5
5	2.1	5.5	5.5	18	67	13	15	12	153	6.5	6.9	3.5
6	2.1	6.1	5.1	14	31	12	16	11	79	6.3	73	3.4
7	2.1	5.5	4.4	12	22	34	14	11	32	5.9	51	3.5
8	2.5	4.9	4.4	10	17	39	13	11	21	5.7	56	4.0
9	2.4	4.2	4.4	9.4	30	24	16	11	16	5.9	52	4.0
10	2.5	4.2	4.0	8.3	27	20	16	9.4	35	22	22	4.0
11	2.8	4.4	3.5	6.5	20	18	14	8.6	27	45	14	3.7
12	2.9	4.2	4.2	6.5	16	26	13	8.3	23	16	11	3.7
13	2.9	4.2	3.9	7.5	16	22	12	8.0	191	9.1	9.4	3.7
14	2.5	4.2	4.6	8.3	14	18	12	7.5	122	6.9	8.3	3.5
15	2.4	4.2	14	8.0	13	19	11	6.9	75	6.5	7.5	3.4
16	2.2	4.4	15	7.7	17	26	10	6.7	29	6.1	7.2	3.6
17	2.1	4.9	11	7.2	109	31	12	6.3	20	5.3	19	3.5
18	2.1	4.9	8.9	6.7	104	24	16	6.1	17	4.7	19	3.2
19	2.5	4.8	7.2	6.7	63	20	12	5.7	15	5.5	11	3.2
20	2.5	4.6	6.1	6.9	59	81	11	6.1	12	8.6	8.3	5.0
21	2.5	4.2	5.5	8.0	47	61	10	5.9	11	6.9	7.5	4.4
22	2.5	4.0	5.9	7.7	30	34	9.1	21	11	5.5	6.7	4.7
23	3.6	4.0	8.0	9.4	22	23	8.0	18	10	21	6.1	4.3
24	6.3	4.7	8.0	8.6	17	18	7.7	13	9.1	14	5.9	4.1
25	5.3	4.9	7.2	7.5	14	15	8.3	11	8.6	8.3	5.7	4.1
26	14	4.9	7.2	6.9	13	15	32	10	8.0	6.3	4.7	7.0
27	74	4.9	6.9	6.5	13	13	55	9.1	8.0	5.3	4.6	16
28	49	4.9	6.3	6.3	14	12	50	20	7.7	4.9	4.6	8.3
29	17	4.4	6.1	6.3	---	12	29	51	7.5	4.6	4.2	6.6
30	11	4.2	5.3	6.7	---	11	22	75	7.5	8.3	4.0	5.6
31	8.0	---	5.5	13	---	12	---	23	---	16	3.7	---
TOTAL	241.5	144.5	198.6	297.6	1249	718	509.1	453.6	1076.4	293.1	474.7	139.8
MEAN	7.79	4.82	6.41	9.60	44.6	23.2	17.0	14.6	35.9	9.45	15.3	4.66
MAX	74	6.5	15	20	194	81	55	75	191	45	73	16
MIN	2.1	4.0	3.5	6.3	13	11	7.7	5.7	7.5	4.6	3.7	3.2
CFSM	.49	.30	.40	.60	2.81	1.46	1.07	.92	2.26	.59	.96	.29
IN.	.56	.34	.46	.70	2.92	1.68	1.19	1.06	2.52	.69	1.11	.33

CAL YR 1981 TOTAL 3224.2 MEAN 8.83 MAX 138 MIN 1.6 CFSM .56 IN 7.54
WTR YR 1982 TOTAL 5795.9 MEAN 15.9 MAX 194 MIN 2.1 CFSM 1.00 IN 13.56

01665500 RAPIDAN RIVER NEAR RUCKERSVILLE, VA

LOCATION.--Lat 38°16'50", long 78°20'25", Madison County, Hydrologic Unit 02080103, on left bank 250 ft (76 m) downstream from bridge on U.S. Highway 29, 0.2 mi (0.3 km) downstream from Elk Run, 1.7 mi (2.7 km) upstream from White Run, 3.6 mi (5.8 km) northeast of Ruckersville, and at mile 63.5 (102.2 km).

DRAINAGE AREA.--114 mi² (295 km²).

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944-45(M). WSP 1382: 1943(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.44 ft (133.941 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of beaver dam construction, Aug. 15 to Sept. 30, which are fair. Diversion 0.4 mi (0.6 km) above station since 1973 by Rapidan Service Authority for municipal supply of Greene County and town of Stanardsville has averaged less than 0.25 ft³/s (0.007 m³/s). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 149 ft³/s (4.220 m³/s), 17.75 in/yr (451 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,700 ft³/s (869 m³/s) Oct. 15, 1942, gage height, 20.8 ft (6.34 m), from floodmark in gage house, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement at gage height 17.78 ft (5.419 m); minimum daily, 0.90 ft³/s (0.025 m³/s) Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (40 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1600	1550	43.9	4.68	1.426	May 29	2330	4450	126	8.59	2.618
Feb. 3	1330	1670	47.3	4.87	1.484	June 3	2200	2290	64.9	5.79	1.765
Feb. 17	1630	1440	40.8	4.49	1.369	June 5	1000	1720	48.7	4.95	1.509
Mar. 20	1000	2150	60.9	5.59	1.704	June 13	1030	3900	110	7.94	2.420
May 28	0500	*6170	175	10.37	3.161						

Minimum daily, 14 ft³/s (0.40 m³/s) Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	96	37	154	450	187	167	246	478	111	83	23
2	17	82	51	154	300	193	143	212	409	97	63	23
3	18	72	45	145	1080	189	194	183	519	92	58	22
4	18	65	44	208	688	167	202	162	542	95	51	20
5	18	62	47	213	482	156	178	147	1180	94	79	19
6	17	67	41	193	370	148	172	135	748	85	114	18
7	17	57	42	179	285	238	152	126	547	76	90	17
8	16	52	41	159	230	254	145	123	422	86	79	16
9	15	48	40	135	296	213	157	112	338	140	73	17
10	15	46	37	120	260	198	147	100	539	123	68	18
11	16	44	37	110	212	187	134	94	462	102	58	18
12	17	41	36	100	185	207	125	88	533	86	61	17
13	18	39	35	93	173	194	120	83	2560	128	51	16
14	18	39	51	87	153	187	116	79	1170	83	50	17
15	18	37	124	82	141	194	107	73	748	114	47	16
16	17	36	128	80	148	204	102	68	555	90	43	16
17	18	36	98	77	615	241	108	64	455	92	40	16
18	18	34	84	79	620	224	118	61	387	108	50	15
19	19	33	70	79	565	221	98	58	322	90	40	14
20	18	33	70	75	515	1030	95	73	271	81	37	14
21	19	33	61	73	444	769	94	94	234	70	34	15
22	21	31	74	71	380	547	85	77	208	61	32	17
23	29	31	74	67	328	436	81	189	188	70	30	19
24	33	37	84	63	291	363	79	96	167	117	29	18
25	28	38	80	67	254	310	77	86	154	81	27	18
26	39	35	76	63	222	297	207	79	144	70	26	19
27	551	36	75	60	214	249	439	73	134	64	24	55
28	456	39	72	63	201	212	504	1530	125	64	24	40
29	216	33	67	69	---	190	366	853	120	61	24	29
30	150	31	61	80	---	174	296	948	129	88	23	25
31	114	---	61	95	---	169	---	475	---	106	22	---
TOTAL	2000	1363	1943	3293	10102	8548	5008	6787	14788	2825	1530	607
MEAN	64.5	45.4	62.7	106	361	276	167	219	493	91.1	49.4	20.2
MAX	551	96	128	213	1080	1030	504	1530	2560	140	114	55
MIN	15	31	35	60	141	148	77	58	120	61	22	14
CFSM	.57	.40	.55	.93	3.17	2.42	1.47	1.92	4.33	.80	.43	.18
IN.	.65	.44	.63	1.07	3.30	2.79	1.63	2.21	4.83	.92	.50	.20

CAL YR 1981 TOTAL 35009.6 MEAN 95.9 MAX 998 MIN 8.0 CFSM .84 IN 11.42
WTR YR 1982 TOTAL 58794.0 MEAN 161 MAX 2560 MIN 14 CFSM 1.41 IN 19.19

01666500 ROBINSON RIVER NEAR LOCUST DALE, VA

LOCATION.--Lat 38°19'30", long 78°05'45", Madison County, Hydrologic Unit 02080103, on right bank 100 ft (30 m) upstream from bridge on State Highway 614, 1.1 mi (1.8 km) upstream from Great Run, 1.7 mi (2.7 km) upstream from mouth, 2.0 mi (3.2 km) southeast of Locust Dale, and 3.4 mi (5.5 km) downstream from Crooked Run.

DRAINAGE AREA.--179 mi² (464 km²).

PERIOD OF RECORD.--July 1943 to current year. Prior to October 1965, published as Robertson River near Locust Dale.

REVISED RECORDS.--WSP 1171: 1948(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 283.70 ft (86.472 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 12 to Sept. 14, which are fair. Small diurnal fluctuation at low flow caused by Banco Mill 9 mi (14 km) upstream at State Highway 231. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--39 years, 218 ft³/s (6.174 m³/s), 16.54 in/yr (420 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s (694 m³/s) June 22, 1972, gage height, 20.92 ft (6.376 m), from rating curve extended above 9,100 ft³/s (260 m³/s) on basis of records for other stations in Rappahannock River basin; minimum, 1.2 ft³/s (0.034 m³/s) Sept. 7, 13, 1954; minimum daily, 1.8 ft³/s (0.051 m³/s) Sept. 13, 27, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.9 ft (7.28 m), from floodmarks, discharge, about 44,000 ft³/s (1,200 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	----	2500	70.8	Ice Jam		June 5	1400	2330	66.0	9.13	2.783
May 28	1700	1890	53.5	8.03	2.448	June 13	1430	*4140	117	13.40	4.084

Minimum discharge, 13 ft³/s (0.37 m³/s) Oct. 9, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	104	49	218	750	230	211	234	397	141	146	46
2	20	92	66	206	500	243	181	209	462	123	107	48
3	20	84	60	167	1700	244	199	190	381	117	113	45
4	18	77	58	257	897	215	232	172	987	122	95	40
5	18	74	63	303	501	204	188	158	1870	123	86	36
6	19	81	57	236	375	194	192	147	998	115	228	34
7	19	71	53	202	293	301	174	139	636	103	200	34
8	18	65	53	171	239	368	164	135	480	104	145	33
9	15	63	49	149	307	282	175	131	383	171	157	41
10	16	61	44	115	325	253	173	117	456	363	131	38
11	18	59	48	135	253	238	159	109	426	215	108	37
12	20	57	48	125	221	259	151	104	381	145	125	35
13	20	55	46	115	209	248	147	100	2680	182	98	33
14	18	54	58	112	191	232	142	104	1450	181	87	32
15	18	55	136	110	178	229	135	91	756	165	95	31
16	19	54	167	110	181	245	131	86	555	130	82	33
17	20	54	122	100	770	309	133	83	464	113	80	32
18	18	53	103	110	761	286	156	79	410	141	87	30
19	21	51	88	110	591	267	131	75	345	119	80	29
20	20	50	87	100	610	840	125	80	295	144	70	29
21	19	49	110	95	507	667	125	79	257	117	64	34
22	22	46	98	92	428	490	116	128	230	97	60	40
23	24	45	94	90	364	399	113	194	215	150	59	49
24	50	50	106	95	324	343	109	122	193	294	60	41
25	34	55	102	87	290	302	106	109	181	154	61	36
26	63	51	99	88	255	289	205	98	173	122	54	40
27	548	52	92	80	244	248	426	91	163	106	49	120
28	602	51	86	90	242	220	473	1090	166	99	51	87
29	237	48	81	100	---	206	324	555	148	95	52	55
30	155	46	73	105	---	195	268	897	154	111	46	45
31	121	---	75	130	---	191	---	371	---	175	43	---
TOTAL	2249	1807	2471	4203	12506	9237	5564	6277	16692	4537	2919	1263
MEAN	72.5	60.2	79.7	136	447	298	185	202	556	146	94.2	42.1
MAX	602	104	167	303	1700	840	473	1090	2680	363	228	120
MIN	15	45	44	80	178	191	106	75	148	95	43	29
CFSM	.41	.34	.45	.76	2.50	1.67	1.03	1.13	3.11	.82	.53	.24
IN.	.47	.38	.51	.87	2.60	1.92	1.16	1.30	3.47	.94	.61	.26

CAL YR 1981 TOTAL 35222 MEAN 96.5 MAX 926 MIN 14 CFSM .54 IN 7.32
WTR YR 1982 TOTAL 69724 MEAN 191 MAX 2680 MIN 15 CFSM 1.07 IN 14.49

01667500 RAPIDAN RIVER NEAR CULPEPER, VA

LOCATION.--Lat 38°21'01", long 77°58'31", Culpeper County, Hydrologic Unit 02080103, on left bank 0.7 mi (1.1 km) upstream from Cedar Run and bridge on U.S. Highway 522, 8.5 mi (13.7 km) south of Culpeper, and at mile 29.6 (47.6 km).

DRAINAGE AREA.--472 mi² (1,222 km²).

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 741: 1931. WSP 801: 1934(M), 1936(M). WSP 1081: 1943-46. WSP 1171: 1932(M), 1933-35. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 241.36 ft (73.567 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Dec. 19 to Jan. 28, which are fair. Diurnal fluctuation at low flow caused by mills at Rapidan and on Robinson River at State Highway 231. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 523 ft³/s (14.81 m³/s), 15.05 in/yr (382 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,100 ft³/s (1,650 m³/s) Oct. 16, 1942, gage height, 30.3 ft (9.24 m), from floodmark, from rating curve extended above 43,000 ft³/s (1,200 m³/s) on basis of slope-area measurement of peak flow; minimum, 2.1 ft³/s (0.059 m³/s) Oct. 4, 5, 11, 1954; minimum daily, 2.2 ft³/s (0.062 m³/s) Oct. 4, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1815	6650	188	9.93	3.027	June 5	1500	5050	143	7.64	2.329
Mar. 20	1930	4720	134	7.18	2.188	June 13	2115	*8120	230	11.72	3.572
May 28	2000	6500	184	9.71	2.960						

Minimum discharge, 50 ft³/s (1.42 m³/s) Oct. 9, 10, gage height, 0.52 ft (0.158 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	300	127	630	1900	650	562	672	1040	403	357	102
2	62	263	171	550	1210	703	498	592	1200	314	251	105
3	64	237	182	530	4400	731	497	530	846	290	226	103
4	62	216	171	610	3130	635	634	475	2230	292	208	90
5	62	204	182	750	1600	589	512	432	4150	309	189	81
6	60	229	174	620	1200	551	504	402	2570	294	307	80
7	58	208	157	500	944	821	467	383	1650	266	367	76
8	55	182	150	440	769	1200	432	368	1290	263	287	75
9	52	171	143	375	838	854	450	363	1030	336	273	93
10	52	164	133	310	979	738	473	324	1060	689	250	86
11	55	160	127	340	742	681	423	299	1290	412	220	84
12	60	153	130	325	639	708	400	284	1050	323	277	80
13	62	146	124	300	606	684	385	268	5390	569	216	76
14	60	143	124	290	573	639	381	267	4610	549	185	71
15	55	143	305	280	523	615	358	246	2050	385	200	68
16	60	143	534	280	513	683	345	233	1490	322	185	68
17	62	140	387	265	1540	859	346	223	1190	269	174	68
18	62	140	310	275	2480	773	410	213	1010	311	237	64
19	66	133	260	265	1680	715	359	206	867	299	207	60
20	64	130	240	255	1770	2490	331	228	742	315	164	62
21	58	127	285	240	1420	2490	332	370	642	267	148	68
22	60	124	260	230	1190	1610	313	298	572	224	140	86
23	71	118	290	225	1010	1240	296	487	528	215	132	110
24	112	124	335	240	905	1040	287	391	475	432	135	95
25	127	140	305	220	807	904	281	308	440	305	131	81
26	143	137	285	215	705	855	422	280	416	243	116	85
27	954	137	260	210	671	744	1110	258	395	218	108	258
28	1710	140	240	200	682	656	1600	3420	384	205	111	203
29	706	133	225	230	---	597	992	1860	355	221	113	128
30	460	127	210	255	---	557	788	2810	364	282	102	105
31	355	---	210	275	---	538	---	1310	---	430	99	---
TOTAL	5949	4912	7036	10730	35426	27550	15188	18800	41326	10252	6115	2811
MEAN	192	164	227	346	1265	889	506	606	1378	331	197	93.7
MAX	1710	300	534	750	4400	2490	1600	3420	5390	689	367	258
MIN	52	118	124	200	513	538	281	206	355	205	99	60
CFSM	.41	.35	.48	.73	2.68	1.88	1.07	1.28	2.92	.70	.42	.20
IN.	.47	.39	.55	.85	2.79	2.17	1.20	1.48	3.26	.81	.48	.22

CAL YR 1981 TOTAL 91910 MEAN 252 MAX 1920 MIN 42 CFSM .53 IN 7.24
WTR YR 1982 TOTAL 186095 MEAN 510 MAX 5390 MIN 52 CFSM 1.08 IN 14.67

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA
(National stream-quality accounting network station)

LOCATION.--Lat 38°19'20", long 77°31'05", Spotsylvania County, Hydrologic Unit 02080104, on right bank 1.6 mi (2.6 km) upstream from dam of Virginia Electric and Power Co., 2.2 mi (3.5 km) downstream from Motts Run, 3.8 mi (6.1 km) upstream from Fredericksburg, and at mile 4.4 (7.1 km).

DRAINAGE AREA.--1,596 mi² (4,134 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1907 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 801: 1924(M). WSP 951: 1937(M). WSP 1302: 1907-12, 1913(M), 1916(M), 1918(M), 1920-21(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.18 ft (16.819 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1922, nonrecording gage, and Jan. 15, 1922, to Aug. 2, 1966, water-stage recorder at same site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--75 years, 1,655 ft³/s (46.87 m³/s), 14.08 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 ft³/s (3,960 m³/s) Oct. 16, 1942, gage height, 26.9 ft (8.20 m), present datum, from floodmarks, from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of flow over dam and slope-area measurements at gage heights 26.1 ft (7.96 m) and 26.9 ft (8.20 m), present datum; minimum, 5 ft³/s (0.14 m³/s) Oct. 11, 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 was probably several feet lower than that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 16,000 ft³/s (450 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	0300	*25500	722	10.20	3.109	June 14	0700	20800	589	9.28	2.829
June 5	2400	16500	467	8.35	2.545						

Minimum discharge, 125 ft³/s (3.54 m³/s) Oct. 11-13, gage height, 1.40 ft (0.427 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	695	329	1350	5020	1650	1490	1880	2020	892	913	223
2	167	593	344	2380	6060	1850	1530	1640	2460	875	708	236
3	162	530	395	1530	12600	1940	1320	1460	2290	742	514	251
4	153	486	471	2180	18200	1700	1710	1310	4870	712	485	249
5	153	449	454	3120	5830	1490	1640	1190	9850	732	519	269
6	150	439	450	1930	3590	1380	1340	1090	11600	751	1460	228
7	150	457	438	1450	2630	1520	1320	1030	5130	707	8430	199
8	145	460	398	1220	2010	4500	1190	990	3490	636	2130	180
9	140	415	375	1030	1900	2660	1170	988	2640	683	1840	171
10	138	387	356	807	3310	2030	1330	1040	2240	853	1380	173
11	130	370	329	798	2270	1760	1290	876	3020	1970	939	212
12	125	359	319	719	1760	1790	1160	811	2460	1100	748	220
13	125	348	307	720	1540	2040	1090	768	6790	1590	749	207
14	132	337	308	785	1510	1760	1050	737	16900	1120	600	189
15	135	329	501	816	1370	1600	1020	708	6270	1360	511	173
16	137	330	1700	821	1360	1940	970	666	3960	882	519	162
17	136	333	1370	781	3620	3000	953	633	3020	727	453	153
18	134	335	962	687	9850	2760	1090	610	2780	612	659	149
19	140	334	746	580	5610	2250	1160	596	2410	614	721	158
20	140	334	623	620	6720	3030	1000	584	1960	584	512	170
21	138	325	594	640	4890	7540	950	591	1640	666	414	154
22	136	321	565	643	3790	5120	930	735	1440	588	371	190
23	142	318	680	693	2950	3450	866	880	1290	500	356	268
24	168	309	1050	644	2460	2760	828	1080	1210	986	333	272
25	178	316	910	698	2140	2360	808	907	1070	1030	318	262
26	319	327	965	667	1820	2120	895	800	1000	616	312	238
27	499	342	838	649	1630	1950	3050	741	993	488	287	440
28	4180	344	722	562	1630	1670	6270	1080	940	427	260	922
29	2330	342	650	535	---	1500	3270	5790	920	385	243	654
30	1220	332	588	574	---	1400	2290	4370	867	428	247	415
31	877	---	532	615	---	1330	---	3420	---	641	237	---
TOTAL	13041	11596	19269	31244	118070	73850	44980	40001	107530	24897	28168	7787
MEAN	421	387	622	1008	4217	2382	1499	1290	3584	803	909	260
MAX	4180	695	1700	3120	18200	7540	6270	5790	16900	1970	8430	922
MIN	125	309	307	535	1360	1330	808	584	867	385	237	149
CFSM	.26	.24	.39	.63	2.64	1.49	.94	.81	2.25	.50	.57	.16
IN.	.30	.27	.45	.73	2.75	1.72	1.05	.93	2.51	.58	.66	.18

CAL YR 1981 TOTAL 227668 MEAN 624 MAX 7120 MIN 97 CFSM .39 IN 5.31
WTR YR 1982 TOTAL 520433 MEAN 1426 MAX 18200 MIN 125 CFSM .89 IN 12.13

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at south bank of river 1.5 mi (2.4 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1929-30, 1956, 1967-74, 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1956, April 1968 to August 1974.
WATER TEMPERATURES: October 1955 to September 1956, April 1968 to August 1974.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 15...	1000	135	90	8.5	11.5	1.4	11.5	K11	97	28	7.1	2.5
DEC 17...	1115	1380	100	7.6	1.0	20	14.0	1200	K4400	31	7.7	2.9
MAR 31...	0900	1330	66	7.3	10.0	3.6	10.7	33	41	22	5.4	2.0
APR 28...	0900	7340	77	6.9	14.0	59	9.0	E50000	E50000	26	6.3	2.4
JUL 12...	1100	1090	80	7.2	26.0	49	6.7	K1200	440	26	6.6	2.3
AUG 17...	1215	449	80	7.5	26.5	2.5	7.2	K36	140	26	6.5	2.3

E Estimated.
K Result based on colony count outside optimal range.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 15...	5.2	2.5	27	4.9	6.1	.1	5.1	59	50	.05	.110	.37
DEC 17...	4.8	2.7	19	11	7.0	<.1	11	70	59	.72	.140	.76
MAR 31...	3.3	.8	16	6.3	4.3	<.1	10	57	42	.77	.030	.30
APR 28...	4.4	1.9	17	10	4.3	.1	9.2	70	49	.51	.070	.73
JUL 12...	3.1	3.0	20	8.0	5.1	<.1	8.2	64	48	.99	.130	.70
AUG 17...	3.8	1.6	25	6.0	5.0	.1	11	--	51	.43	.040	.50

< Actual value is known to be less than the value shown.

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
OCT 15...	.100	.010	.010	2	3	100	10	1	2	20	<10
DEC 17...	.070	.030	<.010	1	<1	100	26	1	<1	40	10
MAR 31...	.020	.010	.010	--	--	--	--	--	--	--	--
APR 28...	.300	.080	.010	2	1	200	170	<1	<1	20	10
JUL 12...	.180	.030	.020	1	1	100	25	1	<1	<10	<10
AUG 17...	.040	.020	.020	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
OCT 15...	2	2	9	2	310	92	1	<1	20	10	<.1
DEC 17...	<1	<1	8	1	1400	360	8	<1	80	42	.1
MAR 31...	--	--	--	--	--	--	--	--	--	--	--
APR 28...	6	<1	11	4	6600	400	10	1	360	13	<.1
JUL 12...	3	1	16	7	2800	99	7	1	80	7	.4
AUG 17...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 15...	<.1	4	2	<1	<1	<1	<1	60	<4	1	100
DEC 17...	.1	3	2	<1	<1	<1	<1	60	20	21	96
MAR 31...	--	--	--	--	--	--	--	--	--	10	75
APR 28...	<.1	4	4	<1	<1	<1	<1	30	24	238	93
JUL 12...	<.1	5	3	<1	<1	<1	<1	30	<4	55	99
AUG 17...	--	--	--	--	--	--	--	--	--	4	97

< Actual value is known to be less than the value shown.

01668500 CAT POINT CREEK NEAR MONTROSS, VA

LOCATION.--Lat 38°02'23", long 76°49'38", Richmond County, Hydrologic Unit 02080104, on right bank 200 ft (61 m) upstream from bridge on State Highway 637, 1.7 mi (2.7 km) west of Farmers Fork, 3.8 mi (6.1 km) south of Montross, and 11.4 mi (18.3 km) upstream from mouth.

DRAINAGE AREA.--45.6 mi^2 (118.1 km^2).

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1382: 1944(M), 1945, 1946-51(M), 1952(P), 1953-54(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.04 ft (0.927 m), revised, National Geodetic Vertical Datum of 1929. Prior to Aug. 19, 1953, nonrecording gage near right bank at downstream side of highway bridge at same datum.

REMARKS.--Records poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 44.2 ft^3/s (1.252 m^3/s), 13.16 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,820 ft^3/s (193 m^3/s) Aug. 20, 1969, gage height, 10.45 ft (3.185 m), from rating curve extended above 1,400 ft^3/s (40 m^3/s); no flow at times in 1943, 1957, 1959, 1960, 1966, and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1935 exceeded 9.3 ft (2.83 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s (7.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 4	0630	558	15.8	6.13	1.868
Aug. 7	1130	588	16.7	6.18	1.884
Aug. 8	2130	*684	19.4	6.34	1.932

Minimum daily discharge, 0.40 ft^3/s (0.011 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	8.0	7.5	31	59	45	32	24	64	11	38	7.5
2	.52	6.9	9.5	30	52	47	27	20	163	9.4	27	6.9
3	.52	6.9	9.5	26	87	52	28	17	69	8.0	18	6.8
4	.55	6.6	10	39	79	47	32	16	352	7.5	14	5.7
5	.56	6.6	10	35	47	54	33	13	235	6.9	10	5.5
6	.56	7.7	10	29	35	52	33	12	165	5.6	37	5.3
7	.54	7.7	10	21	26	88	32	12	86	5.0	288	5.2
8	.50	7.5	10	18	21	199	27	12	51	5.0	411	5.0
9	.46	7.5	9.8	17	20	164	33	12	38	5.0	428	5.0
10	.50	7.3	9.2	15	20	88	39	12	32	8.2	183	5.0
11	.52	7.3	9.0	14	17	68	38	10	28	22	94	5.0
12	.52	7.1	8.8	13	16	61	33	10	27	14	53	5.0
13	.48	6.9	8.6	14	17	53	31	9.8	35	11	40	4.8
14	.56	6.9	9.2	15	17	46	27	9.5	71	14	30	4.5
15	.56	6.9	26	16	20	46	26	9.2	57	45	29	4.5
16	.60	6.9	58	17	26	59	26	9.0	43	23	30	4.5
17	.58	7.5	46	18	46	61	26	7.5	28	17	30	4.2
18	.60	9.5	29	17	116	53	61	7.3	22	13	31	3.8
19	.72	9.2	20	18	128	46	59	7.5	22	10	29	3.7
20	.70	9.0	16	17	96	52	46	12	18	32	24	4.1
21	.70	8.8	16	19	76	62	39	10	17	23	21	4.7
22	.74	8.8	15	22	59	50	33	9.5	14	18	17	6.1
23	.98	8.8	18	30	46	46	31	9.5	14	22	16	7.1
24	2.3	8.8	22	34	40	40	27	9.8	11	37	16	6.8
25	5.9	9.0	25	37	38	39	26	10	10	23	14	6.5
26	9.0	8.8	25	32	33	38	28	10	8.2	17	12	7.1
27	11	8.8	21	26	33	33	59	10	7.7	11	12	10
28	13	7.5	18	21	39	32	94	12	7.3	10	10	10
29	12	7.5	16	23	---	31	40	13	6.9	9.8	9.5	10
30	10	7.3	17	27	---	31	29	19	7.1	14	9.0	10
31	9.0	---	20	33	---	30	---	94	---	32	9.0	---
TOTAL	85.57	234.0	539.1	724	1309	1813	1095	448.6	1709.2	489.4	1989.5	180.3
MEAN	2.76	7.80	17.4	23.4	46.8	58.5	36.5	14.5	57.0	15.8	64.2	6.01
MAX	13	9.5	58	39	128	199	94	94	352	45	428	10
MIN	.40	6.6	7.5	13	16	30	26	7.3	6.9	5.0	9.0	3.7
CFSM	.06	.17	.38	.51	1.03	1.28	.80	.32	1.25	.35	1.41	.13
IN.	.07	.19	.44	.59	1.07	1.48	.89	.37	1.39	.40	1.62	.15

CAL YR 1981 TOTAL 7787.25 MEAN 21.3 MAX 272 MIN .40 CFSM .47 IN 6.35
WTR YR 1982 TOTAL 10616.67 MEAN 29.1 MAX 428 MIN .40 CFSM .64 IN 8.66

01668800 HOSKINS CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°55'38", long 76°57'16", Essex County, Hydrologic Unit 02080104, at bridge on State Highway 717, 0.4 mi (0.6 km) upstream from Criddlin Swamp, 2.9 mi (4.7 km) downstream from site of Hutchinson Mill Pond (destroyed by flood of August 1969), and 5.0 mi (8.0 km) west of Tappahannock.

DRAINAGE AREA.--15.5 mi^2 (40.1 km^2).

PERIOD OF RECORD.--October 1964 to September 1969, June 1970 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.28 ft (11.058 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--17 years, 16.8 ft^3/s (0.476 m^3/s), 14.72 in/yr (374 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,380 ft^3/s (39.1 m^3/s) Aug. 20, 1969, gage height, 10.23 ft (3.118 m), from rating curve extended above 100 ft^3/s (2.8 m^3/s) on basis of velocity-area study; minimum, 0.20 ft^3/s (0.006 m^3/s) Sept. 12, 13, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 136 ft^3/s (3.85 m^3/s) at 1200 hours June 4, gage height, 4.02 ft (1.225 m), no other peak above base of 100 ft^3/s (2.8 m^3/s); minimum daily, 2.3 ft^3/s (0.065 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	5.4	3.6	26	31	19	13	12	22	12	14	5.0
2	2.7	5.2	5.1	19	18	18	12	12	27	11	9.8	5.0
3	2.7	4.6	4.9	15	32	21	12	11	25	8.5	7.9	4.8
4	2.6	4.4	4.8	19	28	20	13	11	98	7.9	6.9	4.6
5	2.5	4.2	5.0	19	19	25	12	11	81	7.0	6.4	4.5
6	2.4	6.6	4.4	14	15	21	13	10	52	6.5	7.2	4.5
7	2.4	6.7	3.8	12	12	37	13	11	34	6.1	24	4.4
8	2.4	5.4	3.6	10	10	63	12	10	26	6.0	28	4.4
9	2.5	4.9	3.6	9.0	11	33	16	10	21	6.4	51	4.5
10	2.5	4.9	3.0	7.7	12	22	18	9.9	18	19	28	4.5
11	2.6	4.8	3.0	6.5	10	18	15	9.8	17	52	16	4.5
12	2.6	4.4	2.8	5.4	8.8	16	14	9.8	16	17	13	4.5
13	2.6	4.0	2.8	6.0	10	14	14	9.8	22	17	11	4.5
14	2.7	3.7	4.4	6.4	10	12	13	9.5	42	22	9.2	4.5
15	2.8	3.8	24	7.0	11	14	13	9.2	27	43	8.5	4.5
16	2.8	3.6	35	7.5	15	18	13	9.2	19	32	7.7	4.5
17	2.9	4.0	23	8.2	27	16	14	9.1	16	15	7.1	4.4
18	2.9	4.8	16	8.0	44	13	23	9.0	13	10	8.2	4.2
19	3.2	4.5	12	8.0	33	12	17	11	13	8.4	8.2	4.1
20	3.4	4.1	9.3	9.0	27	18	14	16	14	8.2	7.4	4.2
21	3.4	3.7	7.6	10	22	30	13	12	12	8.4	7.0	4.6
22	3.3	3.6	10	11	19	23	12	10	11	9.2	6.7	5.5
23	4.0	3.2	13	14	17	17	12	10	11	8.4	6.6	7.4
24	7.2	3.3	12	18	16	14	11	10	10	8.2	6.3	7.6
25	10	3.9	15	14	15	13	11	12	9.0	7.4	6.0	6.1
26	15	4.1	15	11	14	13	13	11	8.2	6.5	5.6	6.7
27	11	3.9	12	9.5	15	12	23	10	8.0	6.0	5.3	14
28	10	3.5	11	9.2	19	12	27	10	7.8	7.2	5.6	11
29	8.0	3.4	9.1	10	---	11	16	17	8.5	12	5.4	8.4
30	6.5	3.1	7.7	11	---	11	14	51	9.8	12	5.1	6.8
31	5.8	---	8.2	15	---	12	---	31	---	16	5.0	---
TOTAL	137.7	129.7	294.7	355.4	520.8	598	436	394.3	698.3	416.3	344.1	168.2
MEAN	4.44	4.32	9.51	11.5	18.6	19.3	14.5	12.7	23.3	13.4	11.1	5.61
MAX	15	6.7	35	26	44	63	27	51	98	52	51	14
MIN	2.3	3.1	2.8	5.4	8.8	11	11	9.0	7.8	6.0	5.0	4.1
CFSM	.29	.28	.61	.74	1.20	1.25	.94	.82	1.50	.87	.72	.36
IN.	.33	.31	.71	.85	1.25	1.44	1.05	.95	1.68	1.00	.83	.40

CAL YR 1981 TOTAL 3000.48 MEAN 8.22 MAX 60 MIN .98 CFSM .53 IN 7.20
WTR YR 1982 TOTAL 4493.50 MEAN 12.3 MAX 98 MIN 2.3 CFSM .79 IN 10.78

01669000 PISCATAWAY CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°52'37", long 76°54'03", Essex County, Hydrologic Unit 02080104, on right bank at upstream side of bridge on State Highway 691, 0.6 mi (1.0 km) south of Henley Fork, 2.3 mi (3.7 km) downstream from Sturgeon Swamp, and 4.2 mi (6.8 km) southwest of Tappahannock.

DRAINAGE AREA.--28.0 mi^2 (72.5 km^2).

PERIOD OF RECORD.--July 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1970-76(P), 1978(P).

GAGE.--Water-stage recorder. Datum of gage is 2.50 ft (0.762 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 32.3 ft^3/s (0.915 m^3/s), 15.67 in/yr (398 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft^3/s (67.4 m^3/s) Aug. 20, 1969, gage height, 7.52 ft (2.292 m), from rating curve extended above 1,400 ft^3/s (40 m^3/s); minimum, 0.01 ft^3/s (<0.001 m^3/s) Oct. 2, 1954, gage height, 0.33 ft (0.101 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 168 ft^3/s (4.76 m^3/s) June 5, gage height, 3.30 ft (1.006 m), no peak above base of 250 ft^3/s (7.1 m^3/s); minimum, 2.5 ft^3/s (0.071 m^3/s) Oct. 1, Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	7.5	6.8	40	47	37	40	30	27	12	28	6.2
2	3.2	7.6	7.5	46	39	36	35	26	22	14	17	6.1
3	3.2	8.0	8.6	39	45	40	32	24	22	11	11	5.2
4	3.4	7.8	8.5	35	51	40	34	22	89	9.0	8.3	4.3
5	3.5	8.0	8.2	35	36	46	31	21	128	7.6	7.3	3.8
6	3.5	9.0	7.0	27	28	42	31	19	85	7.1	10	3.3
7	3.4	9.4	6.5	22	23	80	29	19	53	6.4	24	3.4
8	3.1	9.6	5.9	19	21	124	28	18	40	6.1	26	3.3
9	2.9	9.6	5.3	16	21	58	33	17	32	6.8	42	3.2
10	3.1	9.5	5.0	14	24	44	40	16	29	27	50	3.3
11	3.2	9.0	4.7	12	23	40	34	15	27	57	24	3.5
12	3.2	8.4	4.8	10	20	41	31	14	25	31	16	3.5
13	3.0	7.8	4.9	10	21	40	28	14	28	16	13	3.4
14	3.5	7.2	6.5	12	21	34	26	14	46	14	12	3.2
15	3.5	7.0	31	13	24	36	26	12	41	19	10	2.9
16	3.7	7.0	69	14	31	51	25	12	28	22	8.6	2.9
17	3.5	7.2	46	16	51	46	27	12	23	14	8.2	2.7
18	3.7	7.8	31	14	84	37	62	11	20	11	9.6	2.5
19	4.5	8.2	22	15	62	33	49	16	18	8.3	9.6	2.7
20	4.3	7.9	16	14	50	44	35	60	19	7.1	8.8	4.6
21	4.0	7.6	12	17	40	86	31	39	18	6.4	7.7	5.2
22	4.0	7.2	14	17	33	79	29	22	16	5.7	7.3	7.4
23	4.4	7.0	22	23	29	50	27	19	14	5.8	9.6	10
24	6.5	7.1	21	33	26	44	26	20	14	6.8	12	10
25	10	7.0	23	36	25	41	25	30	12	7.1	12	8.2
26	15	7.3	29	17	22	40	29	34	11	6.8	8.8	9.1
27	15	7.6	24	15	23	36	42	25	10	5.9	7.1	22
28	13	7.6	18	16	31	34	62	22	9.8	5.5	7.6	22
29	11	7.2	16	17	---	33	42	28	9.0	6.2	7.3	13
30	8.3	6.8	14	19	---	32	32	54	9.6	12	7.3	9.4
31	7.3	---	14	27	---	34	---	40	---	28	6.7	---
TOTAL	166.6	235.9	512.2	660	951	1458	1021	725	925.4	402.6	436.8	190.3
MEAN	5.37	7.86	16.5	21.3	34.0	47.0	34.0	23.4	30.8	13.0	14.1	6.34
MAX	15	9.6	69	46	84	124	62	60	128	57	50	22
MIN	2.6	6.8	4.7	10	20	32	25	11	9.0	5.5	6.7	2.5
CFSM	.19	.28	.59	.76	1.21	1.68	1.21	.84	1.10	.46	.50	.23
IN.	.22	.31	.68	.88	1.26	1.94	1.36	.96	1.23	.53	.58	.25

CAL YR 1981 TOTAL 4682.3 MEAN 12.8 MAX 139 MIN 2.3 CFSM .46 IN 6.22
WTR YR 1982 TOTAL 7684.8 MEAN 21.1 MAX 128 MIN 2.5 CFSM .75 IN 10.21

01669520 DRAGON SWAMP AT MASCOT, VA

LOCATION.--Lat 37°38'01", long 76°41'48", King and Queen County, Hydrologic Unit 02080102, on right bank at upstream side of bridge on State Highway 603, 0.8 mi (1.3 km) east of Mascot, 2.1 mi (3.5 km) downstream from Church Swamp, and 3.3 mi (5.6 km) west of Warner.

DRAINAGE AREA.--108 mi^2 (279.7 km^2).

PERIOD OF RECORD.--August 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 21.60 ft (6.584 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR CURRENT PERIOD.--August to September 1981: Maximum discharge during period, 48 ft^3/s (1.36 m^3/s) Sept. 18, gage height, 3.69 ft (1.125 m); minimum, 0.30 ft^3/s (0.008 m^3/s) Sept. 5.

Water year 1982: Maximum discharge, 622 ft^3/s (17.6 m^3/s) at 1200 hours Mar. 23, gage height, 6.56 ft (1.999 m), no other peak above base of 600 ft^3/s (17 m^3/s); minimum, 1.0 ft^3/s (0.028 m^3/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											---	.64
2											---	.56
3											---	.56
4											---	.60
5											---	.44
6											---	.40
7											---	.44
8											---	.60
9											---	2.2
10											---	1.2
11											---	.66
12											---	.48
13											---	.44
14											4.2	.40
15											1.9	.50
16											1.3	33
17											1.4	23
18											1.9	41
19											2.8	32
20											4.2	21
21											3.6	16
22											3.9	14
23											3.9	12
24											1.4	9.6
25											1.6	8.3
26											1.7	7.0
27											1.8	5.5
28											1.3	3.4
29											1.0	2.5
30											.88	2.2
31											.82	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	240.62
MEAN	---	---	---	---	---	---	---	---	---	---	---	8.02
MAX	---	---	---	---	---	---	---	---	---	---	---	41
MIN	---	---	---	---	---	---	---	---	---	---	---	.40
CFSM	---	---	---	---	---	---	---	---	---	---	---	.07
IN.	---	---	---	---	---	---	---	---	---	---	---	.08

01669520 DRAGON SWAMP AT MASCOT, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	21	20	113	166	174	140	111	62	33	226	95
2	2.3	20	22	133	188	173	137	111	129	30	164	75
3	2.3	19	24	129	254	168	131	98	96	33	140	60
4	1.4	17	25	142	280	161	137	80	145	36	114	48
5	1.6	15	26	147	246	160	136	68	143	33	88	38
6	2.1	27	25	129	213	165	140	57	148	25	70	30
7	5.3	24	24	113	180	202	131	49	133	20	109	25
8	4.5	22	23	101	152	320	120	44	117	16	97	22
9	4.1	22	22	89	129	378	124	38	127	14	169	20
10	4.2	22	21	72	122	368	127	34	129	13	164	19
11	4.7	21	20	47	110	290	122	30	110	11	165	18
12	5.0	21	18	30	98	224	119	26	84	10	265	17
13	5.5	20	17	26	96	184	115	25	66	14	224	16
14	4.9	19	19	32	100	159	110	23	71	38	182	16
15	4.9	19	66	36	110	156	104	21	63	173	152	15
16	4.9	19	142	38	125	191	100	19	57	174	118	14
17	4.9	21	157	40	156	220	97	17	61	136	97	14
18	4.7	31	159	39	240	224	110	16	80	100	113	12
19	6.1	28	146	40	290	213	111	15	61	84	84	11
20	5.7	28	116	40	332	216	108	24	58	72	84	11
21	6.1	26	90	45	320	302	114	25	52	48	79	12
22	5.0	23	70	49	259	500	122	25	57	31	67	16
23	5.0	23	78	67	202	608	117	24	53	90	78	17
24	8.7	24	75	114	166	492	106	30	46	118	101	17
25	12	26	90	125	141	320	93	61	37	78	82	18
26	20	24	109	130	122	234	91	56	32	69	67	27
27	22	23	109	118	115	190	108	48	26	54	52	59
28	23	22	101	108	157	164	139	42	22	42	75	57
29	22	21	94	104	---	147	123	39	19	69	89	57
30	21	20	79	101	---	136	111	49	16	61	114	60
31	21	---	69	118	---	130	---	42	---	200	118	---
TOTAL	247.1	668	2056	2615	5069	7569	3543	1347	2302	1925	3747	916
MEAN	7.97	22.3	66.3	84.4	181	244	118	43.5	76.7	62.1	121	30.5
MAX	23	31	159	147	332	608	140	111	148	200	265	95
MIN	1.4	15	17	26	96	130	91	15	18	10	52	11
CFSM	.07	.21	.61	.78	1.68	2.26	1.09	.40	.71	.58	1.12	.28
IN.	.09	.23	.71	.90	1.75	2.61	1.22	.46	.79	.66	1.29	.32

WTR YR 1982 TOTAL 32004.1 MEAN 87.7 MAX 608 MIN 1.4 CFSM .81 IN 11.02

01670000 BEAVERDAM SWAMP NEAR ARK, VA

LOCATION.--Lat 37°28'14", long 76°33'48", Gloucester County, Hydrologic Unit 02080102, on right bank 300 ft (91 m) downstream from bridge on State Highway 606, 1.4 mi (2.3 km) upstream from Beech Swamp, 2.3 mi (3.7 km) north of Ark, and 4.3 mi (6.9 km) northwest of Gloucester.

DRAINAGE AREA.--6.63 mi^2 (17.17 km^2).

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1502: 1950, 1951-52(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.43 ft (11.104 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 7.17 ft^3/s (0.203 m^3/s), 14.69 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 570 ft^3/s (16.1 m^3/s) Sept. 12, 1960, gage height, 5.88 ft (1.792 m), from rating curve extended above 130 ft^3/s (3.7 m^3/s); no flow July 30 to Aug. 2, 1953, Aug. 18, Sept. 4, Sept. 29 to Oct. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 212 ft^3/s (6.00 m^3/s) at 2230 hours Aug. 11, gage height, 3.93 ft (1.198 m), no other peak above base of 65 ft^3/s (1.8 m^3/s); no flow Oct. 1 and part of Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.4	2.7	17	7.7	12	5.2	6.9	4.7	4.0	14	1.7
2	.01	1.5	2.9	11	5.0	7.7	4.8	5.8	12	3.9	6.4	1.4
3	.03	1.7	3.1	7.4	6.8	5.8	4.8	5.1	11	2.5	2.6	1.2
4	.07	1.8	2.3	10	6.9	4.8	4.6	4.5	7.1	1.8	1.3	1.1
5	.17	2.1	2.3	8.8	4.6	4.4	4.1	4.1	7.8	1.6	.80	1.0
6	.36	2.0	2.3	6.9	3.4	5.3	5.3	4.0	8.0	1.6	1.5	.95
7	.73	2.0	2.5	5.1	2.8	16	5.4	3.8	5.6	1.2	13	.90
8	.70	1.8	2.2	4.5	2.9	24	4.7	3.6	4.1	1.2	16	.85
9	.95	1.6	2.1	3.8	3.5	10	6.1	4.0	3.2	1.1	19	.95
10	.85	1.5	2.2	2.5	4.2	7.2	7.4	3.5	2.6	1.1	30	.95
11	.65	1.5	2.2	1.6	3.5	5.9	5.7	3.0	2.2	1.0	56	1.0
12	.65	1.5	2.3	1.3	4.1	5.7	4.8	2.7	1.8	.95	68	.95
13	.65	1.4	2.4	1.8	7.2	5.3	4.4	2.6	2.0	.90	22	.90
14	.77	1.4	2.8	2.3	6.0	4.8	4.1	2.4	3.8	1.4	12	.90
15	.38	1.5	10	3.0	7.5	7.4	3.9	2.1	3.5	5.8	8.3	.90
16	.44	1.6	17	3.7	9.6	18	3.6	1.8	2.4	5.3	5.9	.90
17	.60	1.8	8.3	4.1	11	16	3.8	1.6	2.5	2.9	4.7	.90
18	.70	2.0	5.6	3.8	14	9.2	7.7	1.5	8.5	1.5	4.5	.90
19	.41	1.7	4.1	3.6	11	6.9	7.7	1.4	9.4	1.1	3.5	.85
20	.15	1.7	3.0	3.6	9.0	13	5.6	1.3	6.5	.80	3.0	.85
21	.17	1.4	2.3	4.4	7.5	23	5.0	1.2	4.7	.50	2.6	.95
22	.17	1.6	3.0	4.6	5.7	15	4.7	1.2	3.3	.26	2.3	2.4
23	.20	1.9	4.1	10	4.7	9.2	4.4	1.8	2.6	.29	2.3	2.8
24	.24	1.9	3.6	18	4.1	7.2	4.0	3.2	2.1	1.5	2.5	2.2
25	1.8	2.3	5.0	10	3.6	6.2	3.9	6.6	1.7	1.8	2.5	1.6
26	4.1	2.3	5.9	6.1	3.3	5.8	9.2	5.8	1.4	1.0	2.1	3.3
27	3.6	2.2	5.3	4.0	4.6	5.2	28	4.1	1.1	.47	1.8	9.8
28	2.7	1.9	4.6	3.3	17	4.7	24	3.0	1.0	.44	8.3	6.5
29	2.1	2.0	3.9	3.9	---	4.6	14	2.6	1.8	1.1	7.4	3.4
30	1.8	2.4	3.3	4.4	---	4.6	8.8	4.5	2.6	1.5	3.8	2.9
31	1.4	---	3.6	6.2	---	4.8	---	5.2	---	8.8	2.4	---
TOTAL	27.55	53.4	126.9	180.7	181.2	279.7	209.7	104.9	131.0	59.31	330.50	55.90
MEAN	.89	1.78	4.09	5.83	6.47	9.02	6.99	3.38	4.37	1.91	10.7	1.86
MAX	4.1	2.4	17	18	17	24	28	6.9	12	8.8	68	9.8
MIN	.00	1.4	2.1	1.3	2.8	4.4	3.6	1.2	1.0	.26	.80	.85
CFSM	.13	.27	.62	.88	.98	1.36	1.05	.51	.66	.29	1.61	.28
IN.	.15	.30	.71	1.01	1.02	1.57	1.18	.59	.73	.33	1.85	.31

CAL YR 1981 TOTAL 772.32 MEAN 2.12 MAX 17 MIN .00 CFSM .32 IN 4.33
WTR YR 1982 TOTAL 1740.76 MEAN 4.77 MAX 68 MIN .00 CFSM .72 IN 9.77

01670300 CONTRARY CREEK NEAR MINERAL, VA

LOCATION.--Lat 38°03'53", long 77°52'45", Louisa County, Hydrologic Unit 02080106, on left bank 400 ft (122 m) downstream from bridge on State Highway 522, and 4.0 mi (6.4 km) northeast of Mineral.

DRAINAGE AREA.--5.53 mi² (14.3 km²).

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 275 ft (83.8 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--7 years, 4.87 ft³/s (0.138 m³/s), 11.96 in/yr (304 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 701 ft³/s (19.9 m³/s) Jan. 26, 1978, gage height, 3.33 ft (1.015 m), from rating curve extended above 310 ft³/s (8.8 m³/s); minimum, 0.04 ft³/s (0.001 m³/s) July 31, 1977, June 30, July 1, Aug. 28, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft³/s (6.49 m³/s) at 0600 hours Mar. 21, gage height, 2.34 ft (0.713 m), no other peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.09 ft³/s (0.003 m³/s) Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.85	1.1	22	24	5.6	3.6	4.1	3.1	1.9	1.1	.40
2	.25	.64	2.1	6.5	11	9.3	3.1	3.6	2.8	1.3	.76	.46
3	.19	.55	1.7	5.0	72	12	6.5	3.4	2.4	1.1	.68	.53
4	.18	.55	2.1	24	18	8.4	7.5	3.1	11	1.1	.60	.35
5	.18	.55	3.3	9.3	8.8	7.9	4.1	2.8	54	1.1	.88	.31
6	.18	.55	2.1	5.6	6.5	6.1	4.1	2.6	9.4	1.0	.76	.27
7	.16	.60	1.7	4.4	5.0	18	3.8	2.6	5.1	.88	.88	.23
8	.18	.48	1.4	3.8	4.6	13	3.4	2.4	3.8	1.0	1.9	.31
9	.20	.48	1.2	3.5	6.1	7.9	4.1	2.1	3.4	1.3	1.3	.35
10	.22	.60	1.2	2.8	7.4	6.1	4.1	2.1	3.4	1.5	1.1	.31
11	.24	.72	1.2	2.7	5.3	5.6	3.6	1.7	3.6	1.3	1.1	.31
12	.27	.60	1.2	2.5	4.6	6.1	3.4	1.7	3.6	1.3	2.4	.23
13	.27	.50	1.2	2.4	4.6	5.6	3.4	1.5	16	1.3	1.1	.23
14	.27	.50	1.7	2.3	5.0	5.0	3.1	1.5	10	1.3	.88	.20
15	.33	.58	28	2.4	5.6	5.0	3.1	1.5	5.1	1.1	1.1	.20
16	.33	.68	12	2.6	5.6	7.9	2.8	1.5	3.8	1.0	3.4	.17
17	.33	.75	5.6	2.6	31	7.9	3.1	1.3	3.4	.76	2.6	.13
18	.43	.75	4.1	2.3	18	5.6	4.6	1.1	3.1	.76	3.1	.10
19	.43	.75	3.3	2.2	25	5.0	3.4	1.1	2.8	.68	1.1	.10
20	.30	.75	2.8	2.2	14	43	3.1	1.3	2.6	.60	.76	.53
21	.30	.75	2.8	2.3	8.8	61	3.1	1.1	2.1	.68	.68	.53
22	.30	.58	3.3	2.5	7.0	14	2.8	1.9	1.9	.60	.53	3.1
23	.76	.47	5.0	2.4	5.6	8.4	2.6	2.4	1.9	.60	.46	1.1
24	1.5	.60	3.8	2.2	4.6	7.0	2.6	2.4	1.7	.68	.46	.68
25	3.0	1.1	5.0	2.0	4.4	5.6	2.6	2.6	1.7	.53	.46	.60
26	14	1.1	4.6	1.9	3.8	5.6	13	1.9	1.5	.46	.40	2.4
27	15	.98	3.5	1.9	4.1	4.6	22	1.7	1.7	.40	.46	4.4
28	4.1	.85	3.0	2.0	5.0	4.4	11	2.6	1.5	.60	.60	1.7
29	1.6	.85	2.8	2.2	---	4.1	6.0	2.1	1.3	1.0	.46	1.1
30	1.1	.74	2.3	2.6	---	3.8	4.4	6.0	1.5	1.5	.40	1.0
31	.98	---	3.0	11	---	3.8	---	3.4	---	1.5	.40	---
TOTAL	47.73	20.45	118.1	144.1	325.4	313.3	148.0	71.1	169.2	30.83	32.81	22.33
MEAN	1.54	.68	3.81	4.65	11.6	10.1	4.93	2.29	5.64	.99	1.06	.74
MAX	15	1.1	28	24	72	61	22	6.0	54	1.9	3.4	4.4
MIN	.15	.47	1.1	1.9	3.8	3.8	2.6	1.1	1.3	.40	.40	.10
CFSM	.28	.12	.69	.84	2.10	1.83	.89	.41	1.02	.18	.19	.13
IN.	.32	.14	.79	.97	2.19	2.11	1.00	.48	1.14	.21	.22	.15

CAL YR 1981 TOTAL 718.57 MEAN 1.97 MAX 28 MIN .05 CFSM .36 IN 4.83
WTR YR 1982 TOTAL 1443.35 MEAN 3.95 MAX 72 MIN .10 CFSM .71 IN 9.71

01670400 NORTH ANNA RIVER NEAR PARTLOW, VA

LOCATION.--Lat 38°00'46", long 77°42'05", Spotsylvania County, Hydrologic Unit 02080106, on left bank 175 ft (53 m) downstream from bridge on State Highway 601, 3.8 mi (6.1 km) southwest of Partlow, and 1.1 mi (1.8 km) upstream from Northwest Creek.

DRAINAGE AREA.--344 mi² (891 km²).

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 168.25 ft (51.283 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of no gage-height record, Feb. 3-5 and June 5 to July 16, which are fair. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³) 0.5 mi (0.8 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Feb. 26, 1979, gage height, 25.30 ft (7.711 m), from rating curve extended above 6,000 ft³/s (170 m³/s); minimum, 33 ft³/s (0.93 m³/s) Sept. 27, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,080 ft³/s (116 m³/s) Feb. 4; minimum discharge, 43 ft³/s (1.22 m³/s) May 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	65	49	60	67	272	344	104	379	50	53	49
2	56	62	50	56	220	278	340	202	379	50	53	48
3	52	57	52	59	2340	282	340	198	363	50	53	50
4	52	56	50	62	4080	282	348	198	363	50	53	49
5	55	56	50	56	1680	289	296	198	1480	50	59	49
6	56	57	50	52	908	286	210	102	2230	50	391	48
7	56	57	49	55	904	286	112	43	233	50	399	49
8	53	55	52	53	904	286	115	43	233	50	563	52
9	50	53	50	55	904	300	333	44	188	50	1540	50
10	52	53	50	57	899	1230	304	46	150	50	507	50
11	50	53	49	56	513	1270	208	45	88	50	53	50
12	49	52	48	57	363	300	88	44	112	50	55	53
13	52	52	48	60	359	296	50	44	306	50	53	53
14	53	52	49	63	340	300	50	44	1480	50	48	52
15	55	50	55	65	172	296	84	47	958	50	46	50
16	56	48	55	65	66	293	138	46	100	50	258	50
17	57	49	52	62	322	300	154	46	150	50	198	50
18	57	49	49	56	1160	296	333	47	144	50	340	52
19	59	50	48	56	1430	296	333	49	83	56	348	53
20	55	53	47	57	1430	455	333	47	65	59	55	52
21	55	55	47	60	990	1480	282	48	50	60	46	50
22	55	53	48	60	314	1440	101	48	50	56	48	55
23	57	50	53	63	289	1410	101	49	50	56	50	53
24	63	49	52	65	194	1400	67	46	50	56	53	53
25	59	49	50	63	101	698	47	46	50	53	53	53
26	59	49	52	65	98	53	256	47	50	53	53	56
27	62	49	53	63	160	55	475	47	50	55	52	60
28	63	49	53	63	264	222	1410	100	50	56	52	50
29	65	49	55	62	---	344	1390	253	50	60	50	47
30	65	49	55	60	---	344	245	367	50	55	49	52
31	65	---	56	60	---	344	---	375	---	52	49	---
TOTAL	1746	1580	1576	1846	21471	15693	8887	3063	9984	1627	5680	1538
MEAN	56.3	52.7	50.8	59.5	767	506	296	98.8	333	52.5	183	51.3
MAX	65	65	56	65	4080	1480	1410	375	2230	60	1540	60
MIN	49	48	47	52	66	53	47	43	50	50	46	47
CFSM	.16	.15	.15	.17	2.23	1.47	.86	.29	.97	.15	.53	.15
IN.	.19	.17	.17	.20	2.32	1.70	.96	.33	1.08	.18	.61	.17

CAL YR 1981 TOTAL 19364 MEAN 53.1 MAX 74 MIN 46 CFSM .15 IN 2.09
WTR YR 1982 TOTAL 74681 MEAN 205 MAX 4080 MIN 43 CFSM .60 IN 8.08

01671000 NORTH ANNA RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°53'15", long 77°29'15", Caroline County, Hydrologic Unit 02080106, on left bank 1.5 mi (2.4 km) upstream from bridge on U.S. Highway 1, 2.5 mi (4.0 km) northwest of Doswell, and 4.4 mi (7.1 km) upstream from Bull Run.

DRAINAGE AREA.--441 mi² (1,142 km²).

PERIOD OF RECORD.--March 1926 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "near Hewlett," 1926-28.

REVISED RECORDS.--WSP 1171: 1943. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.66 ft (16.965 m) National Geodetic Vertical Datum of 1929. Mar. 23, 1926, to Aug. 11, 1928, nonrecording gage at site 10.2 mi (16.4 km) upstream at different datum. Mar. 17, 1929, to Nov. 7, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³), 20.5 mi (33.0 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 383 ft³/s (10.85 m³/s), 11.79 in/yr (299 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Aug. 21, 1969, gage height, 32.60 ft (9.936 m); maximum gage height, 33.7 ft (10.27 m) Aug. 12, 1928, from floodmarks, present site and datum; minimum discharge, 1.0 ft³/s (0.028 m³/s) Sept. 30, Oct. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,750 ft³/s (135 m³/s) Feb. 4, gage height, 13.26 ft (4.042 m); minimum, 54 ft³/s (1.53 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	80	69	148	236	360	370	186	381	78	93	68
2	64	75	72	186	236	388	367	188	408	74	86	68
3	62	72	73	154	1220	419	370	231	400	72	74	68
4	59	68	76	192	4240	415	404	227	506	72	68	66
5	57	68	78	281	2500	408	404	222	1510	70	65	65
6	59	67	78	191	1120	396	319	210	2170	67	224	64
7	59	66	75	130	1080	440	193	99	1410	65	411	62
8	58	65	72	107	1070	610	174	80	1330	67	404	62
9	57	64	72	96	1060	492	234	79	704	67	1380	66
10	57	64	72	84	1070	1070	378	76	331	69	1120	65
11	59	65	69	82	830	1490	295	74	298	66	207	64
12	57	65	67	82	392	692	222	73	110	64	136	64
13	57	64	67	83	388	384	117	73	288	72	102	68
14	57	62	69	88	384	378	104	70	1440	76	90	68
15	62	62	93	100	319	378	100	69	1350	69	78	67
16	62	61	212	105	158	392	144	72	212	69	180	66
17	62	62	200	102	287	400	171	72	211	68	360	64
18	62	65	142	94	1320	396	274	69	322	68	309	61
19	62	67	105	87	1700	378	338	73	236	65	378	64
20	60	70	93	88	1660	539	331	76	169	68	268	66
21	58	70	90	88	1510	1910	322	73	94	67	84	66
22	60	70	79	91	492	1810	210	74	74	65	76	79
23	65	68	83	96	408	1600	140	76	73	64	74	76
24	70	69	90	97	350	1540	136	81	73	64	72	72
25	75	70	94	98	229	1310	97	83	73	61	70	70
26	75	70	102	88	203	212	121	81	73	60	68	79
27	132	70	100	93	207	144	419	80	74	60	66	138
28	251	70	94	89	334	160	1330	79	73	67	66	105
29	150	68	88	88	---	364	1530	166	72	83	65	83
30	105	68	84	88	---	364	841	316	72	86	62	73
31	87	---	83	104	---	364	---	378	---	87	65	---
TOTAL	2320	2025	2841	3500	25003	20203	10455	3806	14537	2150	6801	2147
MEAN	74.8	67.5	91.6	113	893	652	349	123	485	69.4	219	71.6
MAX	251	80	212	281	4240	1910	1530	378	2170	87	1380	138
MIN	57	61	67	82	158	144	97	69	72	60	62	61
CFSM	.17	.15	.21	.26	2.03	1.48	.79	.28	1.10	.16	.50	.16
IN.	.20	.17	.24	.30	2.11	1.70	.88	.32	1.23	.18	.57	.18

CAL YR 1981 TOTAL 29097 MEAN 79.7 MAX 251 MIN 53 CFSM .18 IN 2.45
WTR YR 1982 TOTAL 95788 MEAN 262 MAX 4240 MIN 57 CFSM .59 IN 8.08

01671020 NORTH ANNA RIVER AT HART CORNER NEAR DOSWELL, VA

LOCATION.--Lat 37°51'00", long 77°25'41", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 30, 0.3 mi (0.5 km) west of Hart Corner, 2.1 mi (3.4 km) east of Doswell, and 5.4 mi (8.7 km) upstream from confluence with South Anna River.

DRAINAGE AREA.--463 mi^2 (1,199 km^2).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 43 ft (13.1 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Feb. 3-14, which are fair. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm^3), 27.7 mi (44.6 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,800 ft^3/s (221 m^3/s) Oct. 3, 1979; minimum discharge, 44 ft^3/s (1.25 m^3/s) Sept. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,650 ft^3/s (103 m^3/s) Feb. 5; minimum discharge, 55 ft^3/s (1.56 m^3/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	85	72	156	291	400	424	268	407	82	90	73
2	62	79	77	217	286	440	416	210	424	80	94	73
3	61	77	78	176	830	480	424	257	426	77	77	71
4	59	72	80	203	3640	490	464	246	575	76	68	68
5	59	72	84	372	3650	480	468	239	1270	73	64	67
6	62	72	83	248	1420	470	386	232	2090	71	159	67
7	62	70	82	168	1200	520	237	145	1630	68	426	66
8	61	70	78	130	1100	690	196	99	1340	85	443	66
9	59	67	76	113	1080	580	228	96	900	89	1230	68
10	58	68	74	94	1060	1250	435	92	392	77	1350	68
11	60	68	73	87	900	1600	340	89	359	78	284	67
12	60	68	71	96	520	820	254	86	178	68	151	67
13	57	67	71	98	452	456	161	84	227	76	118	71
14	56	67	72	100	448	435	128	83	1170	84	100	71
15	61	67	109	110	393	430	122	82	1170	100	89	71
16	65	66	225	111	221	458	147	84	403	77	139	70
17	64	66	237	109	440	477	185	83	181	71	384	68
18	66	70	172	106	1500	456	268	79	344	72	254	65
19	67	70	121	102	1850	435	384	84	283	65	395	65
20	64	76	93	102	1780	591	384	94	185	71	311	67
21	62	76	87	108	1600	1980	371	84	127	70	108	67
22	62	74	100	112	670	2260	273	84	84	66	83	83
23	67	73	95	118	500	1990	158	86	83	65	80	82
24	73	73	95	126	439	1730	153	94	79	65	78	73
25	80	77	109	122	301	1480	123	101	80	64	76	71
26	91	77	110	114	242	405	131	96	79	61	72	78
27	113	77	108	105	235	213	462	94	80	60	71	140
28	269	73	100	108	370	186	1200	91	80	62	71	118
29	186	72	94	116	---	405	1550	138	77	90	68	91
30	125	72	88	116	---	424	1050	308	82	79	67	78
31	95	---	86	139	---	418	---	407	---	96	68	---
TOTAL	2444	2161	3100	4183	27418	23449	11522	4315	14805	2318	7068	2250
MEAN	78.8	72.0	100	135	979	756	384	139	494	74.8	228	75.0
MAX	269	85	237	372	3650	2260	1550	407	2090	100	1350	140
MIN	56	66	71	87	221	186	122	79	77	60	64	65
CFSM	.17	.16	.22	.29	2.11	1.63	.83	.30	1.07	.16	.49	.16
IN.	.20	.17	.25	.34	2.20	1.88	.93	.35	1.19	.19	.57	.18

CAL YR 1981 TOTAL 32034 MEAN 87.8 MAX 323 MIN 52 CFSM .19 IN 2.57
WTR YR 1982 TOTAL 105033 MEAN 288 MAX 3650 MIN 56 CFSM .62 IN 8.44

01671100 LITTLE RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°52'21", long 77°30'48", Hanover County, Hydrologic Unit 02080106, on left bank at downstream side of bridge on State Highway 685, 0.8 mi (1.3 km) southwest of Verdon, 2.9 mi (4.7 km) west of Doswell, and 9.6 mi (15.4 km) upstream from mouth.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 132.30 ft (40.325 m) National Geodetic Vertical Datum of 1929 (levels by La Prade Bros., Engineers).

REMARKS.--Records good. Frequent quarry dewatering by the General Crushed Stone Co. above gage adds about 0.5 ft³/s (0.014 m³/s) at times. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 97.4 ft³/s (2.758 m³/s), 12.36 in/yr (314 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) Aug. 21, 1969, gage height, 11.09 ft (3.380 m), from rating curve extended above 7,600 ft³/s (220 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 25, 26, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,490 ft³/s (42.2 m³/s) at 0530 hours Mar. 22, gage height, 5.52 ft (1.682 m), no other peak above base of 650 ft³/s (18 m³/s); minimum, 0.45 ft³/s (0.013 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	40	14	77	158	82	74	74	36	17	6.2	11
2	.70	28	16	131	203	97	73	64	44	16	6.2	9.5
3	.62	20	17	124	217	115	74	56	52	17	6.2	8.5
4	.60	16	17	119	357	131	83	50	114	19	6.5	7.3
5	.69	14	22	214	347	126	92	44	231	17	7.6	6.5
6	.71	11	23	208	190	111	88	40	373	15	11	5.8
7	.66	8.4	23	123	121	124	74	37	301	14	136	5.4
8	.60	8.4	22	88	93	252	66	34	158	13	417	5.8
9	.60	9.1	20	69	79	284	69	32	91	19	224	5.8
10	.62	7.7	18	52	78	162	74	30	65	21	90	4.7
11	.55	7.6	16	41	76	118	76	28	53	23	51	3.7
12	.56	7.8	15	31	72	102	72	25	48	25	45	3.3
13	.54	7.3	14	27	69	92	66	24	59	24	49	2.9
14	.57	7.6	15	30	68	86	62	22	116	24	44	2.3
15	.69	7.9	29	32	66	81	57	21	152	20	34	2.2
16	.81	7.4	89	34	67	95	54	20	113	16	36	2.0
17	.87	8.6	155	32	99	122	54	19	73	14	42	1.8
18	.84	11	127	31	276	122	73	18	53	12	49	1.5
19	1.9	12	86	32	371	105	77	21	44	10	37	1.3
20	.93	12	67	33	247	185	73	25	39	9.0	37	1.4
21	.58	11	57	37	180	814	65	22	32	8.5	36	1.4
22	.70	11	51	40	141	1340	59	22	28	8.0	29	3.9
23	.87	14	53	42	105	573	54	24	25	7.3	27	3.9
24	1.2	11	55	46	89	208	49	28	22	7.6	23	3.3
25	3.7	11	60	44	78	143	46	40	19	6.5	19	3.5
26	5.5	14	66	39	69	122	57	42	17	5.8	17	7.6
27	10	16	71	32	66	107	87	38	17	5.4	14	26
28	81	15	64	29	72	96	125	37	16	5.4	14	34
29	163	14	53	31	---	86	118	35	15	9.0	10	27
30	108	13	42	35	---	79	91	36	14	5.4	8.0	23
31	65	---	36	54	---	75	---	36	---	5.8	9.5	---
TOTAL	454.40	381.8	1413	1957	4054	6235	2182	1044	2420	419.7	1541.2	226.3
MEAN	14.7	12.7	45.6	63.1	145	201	72.7	33.7	80.7	13.5	49.7	7.54
MAX	163	40	155	214	371	1340	125	74	373	25	417	34
MIN	.54	7.3	14	27	66	75	46	18	14	5.4	6.2	1.3
CFSM	.14	.12	.43	.59	1.36	1.88	.68	.32	.75	.13	.46	.07
IN.	.16	.13	.49	.68	1.41	2.17	.76	.36	.84	.15	.54	.08

CAL YR 1981 TOTAL 10786.54 MEAN 29.6 MAX 163 MIN .54 CFSM .28 IN 3.75
WTR YR 1982 TOTAL 22328.40 MEAN 61.2 MAX 1340 MIN .54 CFSM .57 IN 7.76

01672500 SOUTH ANNA RIVER NEAR ASHLAND, VA

LOCATION.--Lat 37°47'48", long 77°32'57", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 54, 4.5 mi (7.2 km) northwest of Ashland, and 7.6 mi (12.2 km) upstream from Newfound River.

DRAINAGE AREA.--394 mi² (1,020 km²).

PERIOD OF RECORD.--October 1930 to current year.

REVISED RECORDS.--WSP 801: 1935(M). WSP 1502: 1935, 1939. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 83.74 ft (25.524 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, diversion 150 ft (46 m) above station for town of Ashland water supply has averaged less than 0.6 ft³/s (0.017 m³/s). Capacity of the diversion pickup is about 1.5 ft³/s (0.042 m³/s). Small diurnal fluctuation at low flow in some years caused by gristmills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 364 ft³/s (10.31 m³/s), 12.55 in/yr (319 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s (484 m³/s) Aug. 23, 1969, gage height, 24.99 ft (7.617 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 12, 1966, caused by diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 15, 1928, reached a stage of about 24 ft (7.3 m), discharge, about 14,500 ft³/s (411 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 7	0430	*2850	80.7	9.94	3.030	Mar. 23	1730	2610	73.9	9.42	2.871

Minimum discharge, 3.5 ft³/s (0.099 m³/s) Oct. 6, gage height, 0.95 ft (0.290 m), due to unknown diversion above gage; minimum daily, 8.8 ft³/s (0.25 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	115	70	372	712	315	308	370	229	80	88	44
2	12	92	71	783	1090	379	301	297	720	85	77	40
3	12	80	73	658	1190	543	297	256	1030	106	88	40
4	11	71	81	565	1760	668	321	226	1660	95	73	43
5	12	65	112	1120	2010	604	476	203	1490	83	67	42
6	9.0	63	117	1040	2430	504	345	187	712	75	174	44
7	9.6	58	120	504	2220	576	288	174	404	70	175	45
8	11	54	110	348	598	1060	267	165	286	70	178	44
9	11	53	94	275	444	1090	263	158	236	65	151	38
10	12	51	83	229	397	629	284	151	208	66	160	32
11	11	51	77	249	456	464	288	142	207	109	134	31
12	9.9	51	73	483	364	393	266	133	350	94	115	30
13	9.2	51	68	496	307	360	243	124	475	143	111	29
14	8.8	49	70	431	291	341	228	117	590	133	139	28
15	10	49	127	405	302	328	217	110	703	112	102	28
16	11	48	573	396	306	365	207	105	436	87	132	28
17	12	51	934	339	492	460	204	99	288	77	137	27
18	16	52	486	312	1300	502	279	96	222	71	536	23
19	17	53	317	286	1730	408	287	105	189	63	462	22
20	15	54	235	268	1180	844	275	101	165	56	224	22
21	11	55	171	263	992	1930	233	118	144	55	143	21
22	14	54	178	266	640	2320	216	157	126	51	104	29
23	16	53	191	291	500	2550	204	155	115	47	84	34
24	22	55	197	303	410	1380	191	156	105	46	72	32
25	34	59	312	288	320	599	180	146	96	44	63	38
26	75	64	353	265	269	501	222	133	91	40	55	46
27	171	66	349	234	261	451	343	124	86	39	53	99
28	706	69	267	233	270	392	775	135	83	40	85	99
29	730	71	214	227	---	329	889	187	80	46	66	138
30	308	70	181	237	---	312	533	194	77	43	51	101
31	166	---	163	340	---	294	---	204	---	55	48	---
TOTAL	2485.5	1827	6467	12506	23241	21891	9430	5028	11603	2246	4147	1317
MEAN	80.2	60.9	209	403	830	706	314	162	387	72.5	134	43.9
MAX	730	115	934	1120	2430	2550	889	370	1660	143	536	138
MIN	8.8	48	68	227	261	294	180	96	77	39	48	21
CFSM	.20	.16	.53	1.02	2.11	1.79	.80	.41	.98	.18	.34	.11
IN.	.23	.17	.61	1.18	2.19	2.07	.89	.47	1.10	.21	.39	.12

CAL YR 1981 TOTAL 42168.5 MEAN 116 MAX 934 MIN 8.8 CFSM .29 IN 3.98
WTR YR 1982 TOTAL 102188.5 MEAN 280 MAX 2550 MIN 8.8 CFSM .71 IN 9.65

01673000 PAMUNKEY RIVER NEAR HANOVER, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°46'03", long 77°19'57", Hanover County, Hydrologic Unit 02080106, on right bank 100 ft (30 m) downstream from bridge on State Highway 614, 0.3 mi (0.5 km) upstream from Mechumps Creek, 2.0 mi (3.2 km) east of Hanover, and 7.0 mi (11.3 km) upstream from Millpond Creek.

DRAINAGE AREA.--1,081 mi^2 (2,800 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 1382: 1949. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.72 ft (4.487 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1976, nonrecording gage at same site and datum, and since June 11, 1957, auxiliary nonrecording gage 1.2 mi (1.9 km) downstream from base gage.

REMARKS.--Records good except those for period of no gage-height record, Jan. 11 to Feb. 3, which are fair. Some regulation since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm^3) and occasional diurnal fluctuation at low flow caused by mill above station. Unknown amount of diversion for irrigation above gage.

AVERAGE DISCHARGE.--41 years, 992 ft^3/s (28.09 m^3/s), 12.46 in/yr (316 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft^3/s (1,140 m^3/s) Aug. 23, 1969, gage height, 31.12 ft (9.485 m), from floodmarks, from rating curve extended above 22,000 ft^3/s (620 m^3/s); minimum, 12 ft^3/s (0.34 m^3/s) Sept. 12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 32.6 ft (9.94 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,700 ft^3/s (190 m^3/s) Mar. 23, gage height, 18.92 ft (5.767 m); minimum, 67 ft^3/s (1.90 m^3/s) Oct. 13-16, gage height, 2.45 ft (0.747 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	364	171	547	1000	995	1060	1400	785	178	173	130
2	81	269	178	1040	1500	1130	1040	842	815	182	200	133
3	80	221	184	1420	2700	1360	1010	777	864	185	185	132
4	80	191	190	1120	3800	1570	1050	740	1670	195	173	126
5	79	169	207	1610	5060	1690	1150	683	2520	187	155	122
6	75	161	247	2120	6040	1460	1170	637	4020	173	169	120
7	76	153	253	1420	5600	1490	927	582	4520	159	546	117
8	76	141	254	880	4380	2530	729	437	3750	152	1060	116
9	74	135	235	677	2440	2750	710	395	2410	345	1620	116
10	72	133	209	542	1920	2220	903	372	1190	202	2240	119
11	71	133	195	415	1850	2620	978	352	920	225	1180	116
12	71	130	182	510	1370	2380	863	330	748	258	461	111
13	71	131	172	830	1070	1310	725	313	549	251	350	104
14	67	132	167	1020	1020	1140	588	293	1310	486	304	105
15	67	132	236	1030	1000	1080	538	276	2750	625	304	104
16	70	138	554	990	892	1190	514	264	2100	328	276	104
17	74	146	1470	880	937	1330	562	258	840	229	562	102
18	74	143	1320	820	2380	1410	651	245	732	193	704	99
19	75	148	833	760	3980	1330	914	233	732	173	1190	96
20	76	150	543	700	4400	1620	932	293	562	149	897	98
21	75	152	411	660	4090	3810	874	298	447	144	546	99
22	75	149	458	655	2970	5320	801	268	323	138	298	109
23	75	150	453	710	1570	6540	606	268	268	135	229	127
24	80	154	432	760	1230	6540	522	326	241	135	204	117
25	93	156	479	760	1030	5270	484	365	223	136	183	109
26	130	159	696	690	814	2960	452	388	208	126	162	117
27	190	167	684	620	749	1260	819	379	198	117	149	231
28	603	172	537	590	817	1010	1670	350	191	113	166	343
29	1300	171	516	570	---	995	3020	336	187	133	185	285
30	1030	171	430	575	---	1070	2830	523	176	154	154	272
31	576	---	372	660	---	1040	---	751	---	160	135	---
TOTAL	5716	4921	13368	26581	66609	68420	29092	13974	36249	6366	15160	4079
MEAN	184	164	431	857	2379	2207	970	451	1208	205	489	136
MAX	1300	364	1470	2120	6040	6540	3020	1400	4520	625	2240	343
MIN	67	130	167	415	749	995	452	233	176	113	135	96
CFSM	.17	.15	.40	.79	2.20	2.04	.90	.42	1.12	.19	.45	.13
IN.	.20	.17	.46	.91	2.29	2.35	1.00	.48	1.25	.22	.52	.14

CAL YR 1981 TOTAL 101471 MEAN 278 MAX 1470 MIN 67 CFSM .26 IN 3.49
WTR YR 1982 TOTAL 290535 MEAN 796 MAX 6540 MIN 67 CFSM .74 IN 10.00

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to January 1976.
WATER TEMPERATURES: October 1945 to September 1946, April 1968 to January 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV 04...	1030	195	110	6.8	13.5	4.5	8.5	47	71	25	5.8	2.6
FEB 03...	0945	2380	89	7.0	1.5	85	13.2	K320	K6500	20	4.6	2.1
MAR 23...	1015	6570	54	6.4	10.0	60	10.0	2400	2100	13	3.0	1.4
APR 26...	1000	428	120	7.2	18.0	3.5	8.6	48	53	28	6.6	2.7
JUL 19...	1015	167	150	7.3	27.0	4.1	6.6	57	270	29	6.6	3.0
AUG 16...	1000	256	110	7.1	23.5	9.8	7.2	350	1100	24	5.6	2.5

K Result based on colony count outside optimal range.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 04...	9.3	3.8	23	21	6.3	.1	11	79	74	.23	.030	.62
FEB 03...	9.6	1.9	19	12	8.5	<.1	10	66	61	.32	.120	.88
MAR 23...	3.3	1.9	9.0	9.4	3.6	<.1	7.6	50	36	.25	.030	.74
APR 26...	11	1.9	24	21	5.4	<.1	9.8	73	73	.12	.050	.45
JUL 19...	16	2.7	27	31	6.4	.1	11	117	94	.34	.110	.70
AUG 16...	8.3	2.1	24	15	4.7	.1	11	77	64	.29	.080	.90

< Actual value is known to be less than the value shown.

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
NOV 04...	.050	.040	.010	1	<1	100	36	1	<1	20	10
FEB 03...	.190	.010	.010	1	<1	100	140	2	<1	30	10
MAR 23...	.080	.030	.030	--	--	--	--	--	--	--	--
APR 26...	.060	.030	<.010	2	1	<100	36	5	5	10	<10
JUL 19...	.090	.080	.030	1	<1	100	36	3	5	10	10
AUG 16...	.080	.040	.030	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
NOV 04...	<1	1	7	3	750	480	2	1	130	120	.1
FEB 03...	5	<1	11	8	5800	390	15	<1	650	120	.1
MAR 23...	--	--	--	--	--	--	--	--	--	--	--
APR 26...	1	1	12	5	890	190	5	2	100	70	.1
JUL 19...	8	8	9	5	900	340	3	3	240	190	.1
AUG 16...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 04...	<.1	2	3	<1	<1	<1	<1	50	12	6	91
FEB 03...	<.1	1	<1	<1	<1	<1	<1	70	44	194	90
MAR 23...	--	--	--	--	--	--	--	--	--	53	--
APR 26...	.1	2	3	<1	<1	<1	<1	40	<3	12	84
JUL 19...	.1	3	1	<1	<1	<1	<1	60	25	12	99
AUG 16...	--	--	--	--	--	--	--	--	--	28	98

< Actual value is known to be less than the value shown.

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV												
04...	1030	--	<1	<1.0	--	<.1	--	<1.0	--	<.1	--	<.1
MAR												
23...	1015	<.10	--	--	<.01	--	<.10	--	<.01	--	<.01	--
APR												
26...	1000	<.10	<1	<1.0	<.01	<.1	<.10	<1.0	<.01	<.1	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV												
04...	--	<.1	--	--	<.1	--	<.1	--	<.1	--	--	<.1
MAR												
23...	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01	<.01	--
APR												
26...	<.01	<.1	--	<.01	<.1	<.01	<.1	<.01	<.1	--	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV											
04...	--	<.1	--	<.1	--	--	<.1	--	--	--	<.1
MAR											
23...	<.01	--	<.01	--	<.01	<.01	--	<.01	<.01	<.01	--
APR											
26...	<.01	<.1	<.01	<.1	--	<.01	<.1	--	--	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PERTHANE IN BOTTOM MATERIL (UG/KG)	SILVEX, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV											
04...	--	--	--	<.10	--	--	5.0	--	--	--	--
MAR											
23...	<.10	<.01	<.01	--	<.01	<1	--	<.01	<.01	<.01	<.01
APR											
26...	<.10	--	<.10	<1.00	--	<1	<10	--	--	--	--

< Actual value is known to be less than the value shown.

01673550 TOTOPOTOMOY CREEK NEAR STUDLEY, VA

LOCATION.--Lat 37°29'44", long 77°15'29", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 606, 2.0 mi (3.2 km) southeast of Studley, 2.4 mi (3.9 km) downstream from Hawes millrace, and 4.1 mi (6.6 km) upstream from mouth.

DRAINAGE AREA.--26.2 mi^2 (67.9 km^2).

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 38.36 ft (11.692 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--5 years, 29.7 ft^3/s (0.841 m^3/s), 15.39 in/yr (391 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 640 ft^3/s (18.1 m^3/s) Feb. 25, 1979, gage height, 8.77 ft (2.673 m), from rating curve extended above 300 ft^3/s (8.5 m^3/s); minimum daily, 0.35 ft^3/s (0.010 m^3/s) Oct. 1-7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft^3/s (4.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Mar. 8	1930	174	4.93	5.64	1.719
Mar. 21	1630	167	4.73	5.57	1.698
Aug. 8	2400	*191	5.41	5.81	1.771

Minimum daily discharge, 1.2 ft^3/s (0.034 m^3/s) Oct. 7-9, 11-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	5.9	7.8	26	46	30	27	21	13	6.3	21	13
2	1.9	6.2	8.5	30	42	31	25	18	12	6.5	23	10
3	1.6	5.8	9.2	24	50	37	25	16	11	7.5	16	9.0
4	1.4	5.6	9.6	27	64	42	24	15	16	5.6	11	7.5
5	1.4	6.3	9.7	31	40	43	23	14	58	4.5	8.8	6.8
6	1.3	7.6	9.4	24	28	42	24	12	60	3.9	7.9	6.5
7	1.2	7.4	9.1	19	22	98	22	12	33	3.5	48	5.8
8	1.2	7.2	8.8	17	19	163	21	11	20	6.9	76	5.6
9	1.2	7.1	9.2	15	18	101	26	11	15	15	127	5.9
10	1.3	6.8	8.2	14	19	47	28	10	12	12	84	5.8
11	1.2	6.3	8.4	13	18	35	28	9.6	10	8.8	37	5.5
12	1.2	6.4	8.1	11	18	31	25	9.1	9.9	20	27	5.4
13	1.2	6.2	8.1	11	19	29	22	8.5	13	54	21	5.3
14	1.2	6.3	8.8	13	19	25	20	7.9	20	48	19	5.4
15	1.2	5.8	25	14	20	27	19	7.5	22	25	32	5.3
16	1.2	5.8	59	14	24	40	18	7.1	18	23	22	5.6
17	1.2	5.6	36	13	39	49	18	6.9	13	18	18	5.9
18	1.4	5.9	23	13	73	37	22	6.9	9.9	13	18	5.3
19	1.4	5.6	17	13	65	28	25	6.5	8.2	10	16	5.1
20	1.7	5.6	15	14	42	76	23	7.5	7.8	18	16	5.9
21	1.8	5.5	12	15	35	150	20	7.6	7.6	17	14	6.5
22	2.4	5.5	15	15	27	90	18	8.2	7.1	14	12	11
23	2.2	5.5	18	18	23	55	17	8.4	6.7	15	13	13
24	3.2	6.2	17	21	20	42	16	8.8	6.0	23	14	13
25	5.1	7.2	21	20	18	36	17	11	5.2	24	13	12
26	9.0	7.6	26	18	17	33	21	11	4.8	15	12	13
27	11	7.6	21	16	17	30	35	11	4.5	10	12	30
28	9.4	7.6	18	16	23	28	52	10	4.4	9.9	30	20
29	6.7	7.5	16	15	---	27	36	9.7	4.0	14	43	18
30	6.3	7.5	14	16	---	25	25	12	4.3	12	23	14
31	5.8	---	14	22	---	25	---	13	---	18	16	---
TOTAL	90.7	193.1	489.9	548	865	1552	722	328.2	436.4	481.4	850.7	281.1
MEAN	2.93	6.44	15.8	17.7	30.9	50.1	24.1	10.6	14.5	15.5	27.4	9.37
MAX	11	7.6	59	31	73	163	52	21	60	54	127	30
MIN	1.2	5.5	7.8	11	17	25	16	6.5	4.0	3.5	7.9	5.1
CFSM	.11	.25	.60	.68	1.18	1.91	.92	.41	.55	.59	1.05	.36
IN.	.13	.27	.70	.78	1.23	2.20	1.03	.47	.62	.68	1.21	.40

CAL YR 1981 TOTAL 3840.9 MEAN 10.5 MAX 83 MIN 1.0 CFSM .40 IN 5.45
WTR YR 1982 TOTAL 6838.5 MEAN 18.7 MAX 163 MIN 1.2 CFSM .71 IN 9.71

01673800 PO RIVER NEAR SPOTSYLVANIA, VA

LOCATION.--Lat 38°10'17", long 77°35'42", Spotsylvania County, Hydrologic Unit 02080105, on right bank at upstream side of bridge on State Highway 208, 1.6 mi (2.6 km) north of Snell, 2.0 mi (3.2 km) south of Spotsylvania, 4.8 mi (7.7 km) downstream from Gladys Run, and 4.9 mi (7.9 km) upstream from U.S. Highway 1.

DRAINAGE AREA.--77.4 mi^2 (200.5 km^2).

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.76 ft (56.010 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--20 years, 74.6 ft^3/s (2.113 m^3/s), 13.09 in/yr (332 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft^3/s (309 m^3/s) June 22, 1972, gage height, 19.03 ft (5.800 m), from rating curve extended above 3,400 ft^3/s (96 m^3/s); minimum daily, 0.10 ft^3/s (0.003 m^3/s) Oct. 24-29, 1963, Sept. 6-13, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft^3/s (33.7 m^3/s) at 1700 hours Feb. 4, gage height, 8.36 ft (2.548 m), no other peak above base of 900 ft^3/s (25 m^3/s); minimum, 0.16 ft^3/s (0.005 m^3/s) Oct. 4, 5, 8, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER [illegible]R OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	4.6	4.2	78	226	64	51	59	28	19	74	6.7
2	.33	3.4	6.5	165	282	87	47	50	42	10	38	6.6
3	.24	2.4	9.2	71	331	127	60	43	31	7.3	21	6.2
4	.19	2.4	9.9	130	964	111	100	37	77	6.7	15	5.8
5	.16	2.5	12	282	343	90	81	34	289	6.0	20	5.5
6	.28	2.6	14	109	114	80	62	29	581	5.4	179	4.9
7	.28	3.5	12	66	81	97	55	26	158	4.8	182	4.7
8	.22	3.8	9.9	49	61	245	48	24	76	4.5	373	4.6
9	.22	3.8	7.9	39	59	150	50	23	50	5.2	395	4.6
10	.22	3.5	6.7	31	79	100	65	21	39	33	178	4.6
11	.28	3.7	6.0	25	72	80	65	19	35	96	78	5.2
12	.34	3.4	5.3	18	54	76	44	17	34	51	50	5.2
13	.34	3.5	5.0	18	51	75	38	15	135	26	37	3.6
14	.34	3.7	5.8	20	74	66	36	14	333	47	28	3.9
15	.34	3.8	53	23	66	59	34	12	121	298	21	3.8
16	.40	4.3	253	23	65	62	32	11	64	90	20	4.4
17	.40	4.5	125	22	142	94	34	11	45	41	27	3.9
18	.40	7.0	63	22	497	90	64	10	35	25	37	5.1
19	.34	3.4	42	22	333	67	83	9.6	28	17	65	4.6
20	.34	3.8	42	22	389	136	53	9.6	21	40	33	4.4
21	.40	3.5	39	24	197	425	46	8.7	18	55	22	4.4
22	.45	3.8	26	27	128	229	41	9.3	16	26	19	11
23	.64	3.7	30	28	93	131	36	9.7	14	16	17	17
24	1.6	3.8	51	29	74	96	32	11	12	12	15	18
25	1.8	4.6	52	26	62	78	30	14	11	9.7	13	13
26	5.3	4.5	50	23	53	71	46	16	9.6	8.2	11	13
27	41	4.5	47	20	49	69	198	16	8.6	7.2	9.8	118
28	90	4.8	36	18	55	57	207	15	7.6	6.7	9.4	57
29	41	4.8	28	19	---	50	119	19	6.9	6.1	8.5	28
30	16	4.0	22	22	---	47	75	30	11	38	7.3	17
31	8.2	---	19	39	---	47	---	35	---	109	6.9	---
TOTAL	212.54	115.6	1092.4	1510	4994	3256	1932	657.9	2336.7	1126.8	2009.9	394.7
MEAN	6.86	3.85	35.2	48.7	178	105	64.4	21.2	77.9	36.3	64.8	13.2
MAX	90	7.0	253	282	964	425	207	59	581	298	395	118
MIN	.16	2.4	4.2	18	49	47	30	8.7	6.9	4.5	6.9	3.6
CFSM	.09	.05	.46	.63	2.30	1.36	.83	.27	1.01	.47	.84	.17
IN.	.10	.06	.53	.73	2.40	1.56	.93	.32	1.12	.54	.97	.19

CAL YR 1981 TOTAL 7273.78 MEAN 19.9 MAX 410 MIN .16 CFSM .26 IN 3.50
WTR YR 1982 TOTAL 19638.54 MEAN 53.8 MAX 964 MIN .16 CFSM .70 IN 9.44

01674000 MATTAPONI RIVER NEAR BOWLING GREEN, VA

LOCATION.--Lat 38°03'42", long 77°23'10", Caroline County, Hydrologic Unit 02080105, on right bank 0.1 mi (0.2 km) upstream from bridge on State Highway 605, 2.2 mi (3.5 km) northwest of Bowling Green, 2.4 mi (3.9 km) upstream from South River, and 7.1 mi (11.4 km) downstream from confluence of Matta and Poni Rivers.

DRAINAGE AREA.--257 mi² (666 km²).

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1382: 1943, 1945(M), 1948(M), 1949, 1953(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 85.14 ft (25.951 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 17, 1978, gage located on left bank at same datum.

REMARKS.--Records good. Some diurnal fluctuation from gristmill upstream on Po River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 237 ft³/s (6.712 m³/s), 12.52 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) June 23, 1972, gage height, 18.95 ft (5.776 m), from high-water mark in well, from rating curve extended above 8,100 ft³/s (230 m³/s); no flow at times in September and October 1954 and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 19.5 ft (5.94 m) based on relative difference in stage between this flood and flood of Oct. 17, 1942, at Milford 4 mi (6 km) downstream, discharge, 15,000 ft³/s (425 m³/s), from rating curve extended above 8,100 ft³/s (230 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s (36.8 m³/s) Feb. 6, gage height, 8.27 ft (2.521 m), no peak above base of 2,000 ft³/s (57 m³/s); minimum, 0.22 ft³/s (0.006 m³/s) Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	54	18	105	266	220	169	266	94	37	203	19
2	.70	37	21	215	405	245	171	198	94	55	189	19
3	.50	25	26	259	537	290	162	162	158	38	125	18
4	.50	21	29	275	664	342	230	137	166	29	73	17
5	.50	18	35	358	880	353	315	115	309	24	53	15
6	.50	15	35	451	1220	308	279	101	495	21	159	13
7	.50	12	36	465	774	302	222	88	840	18	304	12
8	.41	10	35	297	423	419	185	79	955	17	415	11
9	.35	10	31	195	288	555	175	72	559	25	633	11
10	.41	10	26	142	259	583	194	65	279	82	1020	11
11	.41	9.4	23	115	255	429	203	56	207	209	928	11
12	.28	10	21	100	235	329	189	52	166	225	594	11
13	.32	9.4	21	75	206	293	164	47	197	214	333	10
14	.35	9.8	21	80	191	270	135	43	397	157	201	10
15	.35	9.8	46	90	192	241	134	40	587	209	142	10
16	.35	13	180	92	194	230	126	36	675	453	108	9.1
17	.45	10	308	90	235	250	123	33	399	507	98	8.7
18	.56	13	304	83	411	275	161	31	220	239	123	9.1
19	1.1	15	219	82	682	275	195	29	152	121	134	8.4
20	1.4	17	133	79	1050	291	194	27	115	79	131	8.4
21	1.7	14	120	85	1020	457	166	25	87	89	99	8.7
22	1.6	13	102	94	851	660	144	26	70	102	75	15
23	3.5	13	90	100	598	817	128	27	60	77	61	32
24	3.9	14	97	108	405	598	115	33	49	56	54	33
25	6.9	15	114	103	300	387	106	37	41	43	48	32
26	13	16	131	89	235	302	119	41	35	35	41	27
27	30	17	124	80	201	254	212	43	32	27	35	70
28	198	18	112	73	194	220	318	42	29	26	30	212
29	239	17	91	73	---	192	395	41	25	79	26	169
30	157	17	74	77	---	172	369	70	24	71	23	93
31	87	---	60	102	---	161	---	91	---	139	21	---
TOTAL	752.14	482.4	2683	4632	13171	10720	5798	2153	7516	3503	6479	933.4
MEAN	24.3	16.1	86.5	149	470	346	193	69.5	251	113	209	31.1
MAX	239	54	308	465	1220	817	395	266	955	507	1020	212
MIN	.28	9.4	18	73	191	161	106	25	24	17	21	8.4
CFSM	.10	.06	.34	.58	1.83	1.35	.75	.27	.98	.44	.81	.12
IN.	.11	.07	.39	.67	1.91	1.55	.84	.31	1.09	.51	.94	.14

CAL YR 1981 TOTAL 22801.94 MEAN 62.5 MAX 612 MIN .28 CFSM .24 IN 3.30
WTR YR 1982 TOTAL 58822.94 MEAN 161 MAX 1220 MIN .28 CFSM .63 IN 8.51

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°53'16", long 77°09'48", King and Queen County, Hydrologic Unit 02080105, on left bank 0.4 mi (0.6 km) upstream from bridge on State Highway 628, 2.4 mi (3.9 km) north of Beulahville, and 2.7 mi (4.3 km) downstream from Maracossic Creek.

DRAINAGE AREA.--601 mi^2 (1,557 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 12.43 ft (3.789 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Oct. 14, 1942, nonrecording gage, and Oct. 14, 1942, to Aug. 8, 1974, water-stage recorder at site 80 ft (24 m) upstream at same datum.

REMARKS.--Records good. Diurnal fluctuation at times during low flow caused by gristmill on Po River.

AVERAGE DISCHARGE.--41 years, 587 ft^3/s (16.62 m^3/s), 13.26 in/yr (337 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft^3/s (479 m^3/s) June 25, 1972, gage height, 23.97 ft (7.306 m), from floodmarks; maximum gage height, 24.04 ft (7.327 m) Aug. 23, 1969; minimum discharge, 5.9 ft^3/s (0.17 m^3/s) Sept. 14, 1966, gage height, 0.94 ft (0.287 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft^3/s (41.6 m^3/s) Feb. 24, gage height, 10.91 ft (3.325 m); minimum, 8.2 ft^3/s (0.23 m^3/s) Oct. 10-11, 13, gage height, 1.45 ft (0.442 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	232	70	288	463	536	445	647	496	115	204	78
2	9.9	168	82	375	602	577	436	553	582	114	236	71
3	9.3	133	95	436	826	628	434	446	415	111	270	66
4	8.9	106	100	518	1030	676	456	377	642	116	231	62
5	8.7	89	104	619	1110	739	494	323	944	105	171	58
6	9.3	85	108	651	1120	754	558	282	1110	90	132	56
7	11	95	108	667	1150	796	559	252	1100	80	166	52
8	9.9	87	107	664	1230	1050	502	239	1080	75	370	47
9	9.3	74	101	582	1300	1150	461	220	1070	90	891	44
10	8.3	68	95	418	958	1120	481	198	1100	131	1010	43
11	12	63	89	330	587	1090	500	178	946	354	1030	42
12	11	59	85	300	525	1010	487	161	531	402	1050	43
13	8.7	58	84	322	497	804	458	149	459	444	1080	40
14	9.9	62	82	270	472	646	422	140	665	430	856	38
15	12	68	146	264	460	577	389	129	876	524	472	37
16	23	74	319	284	457	599	361	120	920	400	319	35
17	16	74	430	269	534	626	345	115	914	405	244	34
18	13	78	521	269	822	606	376	104	845	517	238	32
19	13	78	521	249	1020	582	441	103	535	461	257	29
20	21	68	447	238	1130	623	475	147	366	312	260	29
21	22	66	373	250	1230	904	460	141	287	266	241	31
22	23	74	326	261	1330	1180	426	119	234	190	225	52
23	24	68	303	279	1430	1270	384	116	200	167	190	97
24	43	63	276	318	1460	1300	348	148	176	173	170	97
25	54	67	282	326	1240	1350	316	152	155	184	149	90
26	100	68	333	315	730	1280	315	169	136	155	131	86
27	141	68	353	268	544	879	421	160	124	121	115	158
28	212	70	320	262	509	626	578	155	112	102	109	210
29	244	72	280	244	---	536	670	152	102	185	94	240
30	336	70	248	241	---	484	674	280	95	163	84	281
31	316	---	218	275	---	453	---	349	---	184	78	---
TOTAL	1750.2	2505	7006	11052	24766	25451	13672	6824	17217	7166	11073	2278
MEAN	56.5	83.5	226	357	885	821	456	220	574	231	357	75.9
MAX	336	232	521	667	1460	1350	674	647	1110	524	1080	281
MIN	8.3	58	70	238	457	453	315	103	95	75	78	29
CFSM	.09	.14	.38	.59	1.47	1.37	.76	.37	.96	.38	.59	.13
IN.	.11	.16	.43	.68	1.53	1.58	.85	.42	1.07	.44	.69	.14

CAL YR 1981 TOTAL 65651.1 MEAN 180 MAX 907 MIN 8.3 CFSM .30 IN 4.06
WTR YR 1982 TOTAL 130760.2 MEAN 358 MAX 1460 MIN 8.3 CFSM .60 IN 8.09

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1969, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT 14...	1200	11	40	6.9	10.0	2.7	10.1	130	200	14	3.1	1.5
DEC 17...	1100	426	40	6.6	3.5	11	13.5	200	2000	11	2.5	1.1
MAR 24...	0945	1300	54	6.3	10.0	12	9.6	210	130	12	2.7	1.3
MAY 24...	1200	154	60	6.8	19.5	10	8.4	1200	730	16	3.5	1.7
AUG 10...	1100	1010	51	6.5	25.0	14	7.4	120	380	12	2.8	1.1

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
OCT 14...	3.1	1.7	11	6.6	4.5	<.1	5.2	43	33	.06	.090	.37
DEC 17...	3.1	2.0	7.0	7.7	4.9	<.1	8.0	43	34	.18	<.010	.47
MAR 24...	4.0	1.4	6.0	9.5	5.8	<.1	7.4	51	36	.13	.030	.51
MAY 24...	3.0	1.0	19	4.0	4.0	<.1	6.9	48	37	.22	.070	2.60
AUG 10...	2.8	1.3	9.0	6.0	3.7	<.1	8.3	47	31	<.10	<.010	.60

< Actual value is known to be less than the value shown.

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
OCT 14...	.020	.020	.020	1	2	100	20	7	3	20	<10
DEC 17...	.060	.030	<.010	1	<1	100	26	1	2	20	10
MAR 24...	.040	.020	<.010	--	--	--	--	--	--	--	--
MAY 24...	.080	.020	<.010	2	1	<100	31	2	1	10	<10
AUG 10...	.080	.010	<.010	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
OCT 14...	3	3	7	2	1700	290	11	<1	120	110	.2
DEC 17...	<1	<1	7	1	1700	340	3	<1	140	76	<.1
MAR 24...	--	--	--	--	--	--	--	--	--	--	--
MAY 24...	2	<1	2	2	3900	830	3	3	190	110	.2
AUG 10...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 14...	<.1	5	2	<1	<1	<1	<1	40	<4	1	100
DEC 17...	<.1	3	2	<1	<1	<1	<1	40	8	129	99
MAR 24...	--	--	--	--	--	--	--	--	--	19	75
MAY 24...	<.1	6	4	<1	<1	<1	<1	30	<3	9	99
AUG 10...	--	--	--	--	--	--	--	--	--	23	90

< Actual value is known to be less than the value shown.

01677000 WARE CREEK NEAR TOANO, VA

LOCATION.--Lat 37°20'17", long 76°47'12", New Kent County, Hydrologic Unit 02080107, on left bank at upstream side of bridge on State Highway 600, 0.8 mi (1.3 km) upstream from France Swamp, and 4.9 mi (7.9 km) north of Toano.

DRAINAGE AREA.--6.29 mi² (16.29 km²).

PERIOD OF RECORD.--October 1979 to October 1981, March 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 10 ft (3 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Oct. 19 to Mar. 2. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36 ft³/s (1.02 m³/s) Nov. 3, 1979, gage height, 2.30 ft (0.701 m); no flow at times September 1980 and July to September 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 26 ft³/s (0.74 m³/s) June 2, gage height, 1.83 ft (0.558 m); minimum daily discharge recorded, 0.64 ft³/s (0.018 m³/s) July 9; minimum gage height recorded, 0.67 ft (0.204 m) July 8-10; discharge and/or gage heights may have been higher or lower during period of no gage-height record, Oct. 19 to Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90					---	3.9	2.9	7.1	2.8	9.1	1.5
2	2.0					4.5	3.9	2.7	20	2.7	4.6	1.5
3	2.9					3.5	4.1	2.7	8.5	1.6	2.6	1.6
4	3.0					3.1	3.6	2.4	9.7	1.5	1.9	1.7
5	3.5					3.0	3.0	2.2	8.6	1.4	1.6	1.6
6	4.2					3.7	4.1	2.2	6.5	1.2	2.1	1.5
7	5.0					6.9	3.9	2.1	4.2	1.1	6.0	1.3
8	5.5					8.4	3.6	2.2	3.5	.81	6.5	1.3
9	5.7					4.8	5.6	2.2	3.3	.64	16	1.3
10	5.9					3.4	5.8	2.1	3.0	.97	7.4	1.5
11	6.5					3.1	4.7	1.8	2.6	2.8	8.3	1.6
12	7.0					3.6	4.1	1.9	2.5	3.6	15	1.7
13	6.8					6.1	3.9	1.7	2.4	3.9	7.1	1.8
14	4.9					9.5	3.6	1.7	4.1	8.0	4.4	2.2
15	3.8					14	3.9	1.6	3.7	9.7	3.4	2.1
16	3.4					17	3.9	1.5	2.7	5.3	3.0	2.2
17	3.4					8.7	4.3	1.5	3.7	3.0	2.8	2.1
18	3.2					5.0	7.1	1.5	12	2.0	4.0	1.9
19	---					4.7	6.9	1.6	7.9	1.5	3.8	1.7
20	---					9.3	5.8	2.2	5.8	1.4	2.8	2.0
21	---					11	6.0	2.1	3.7	1.7	2.6	2.1
22	---					8.3	5.4	2.0	2.8	1.4	3.3	2.4
23	---					6.1	3.9	3.2	2.6	2.5	3.4	2.8
24	---					5.4	2.7	4.1	2.3	6.5	4.0	2.1
25	---					5.1	2.4	8.7	1.7	4.3	3.3	1.7
26	---					4.7	4.1	6.7	1.5	2.6	2.6	3.3
27	---					4.3	11	3.8	1.6	2.0	2.1	9.8
28	---					4.1	6.7	3.0	1.7	1.7	4.1	5.2
29	---					3.6	4.3	2.8	1.8	4.4	3.5	2.8
30	---					3.4	3.3	6.0	2.1	4.2	2.4	2.3
31	---					3.4	---	5.5	---	8.0	2.0	---
TOTAL	---	---	---	---	---	---	139.5	88.6	143.6	95.22	145.7	68.6
MEAN	---	---	---	---	---	---	4.65	2.86	4.79	3.07	4.70	2.29
MAX	---	---	---	---	---	---	11	8.7	20	9.7	16	9.8
MIN	---	---	---	---	---	---	2.4	1.5	1.5	.64	1.6	1.3
CFSM	---	---	---	---	---	---	.74	.46	.76	.49	.75	.36
IN.	---	---	---	---	---	---	.82	.52	.85	.56	.86	.41

JAMES RIVER BASIN

02011400 JACKSON RIVER NEAR BACOVA, VA

LOCATION.--Lat 38°02'32", long 79°52'54", Bath County, Hydrologic Unit 02080201, on left bank 0.1 mi (0.2 km) downstream from ford, 1.8 mi (2.9 km) upstream from Back Creek, and 2.2 mi (3.5 km) southwest of Bacova.

DRAINAGE AREA.--158 mi^2 (409 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,639.20 ft (499.628 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--8 years, 169 ft^3/s (4.786 m^3/s), 14.53 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,970 ft^3/s (197 m^3/s) Apr. 5, 1977, gage height, 13.39 ft (4.081 m), from rating curve extended above 1,300 ft^3/s (37 m^3/s) on basis of slope-area measurements at gage heights 8.88 ft (2.707 m), 11.40 ft (3.475 m), and 13.88 ft (4.231 m); minimum, 17 ft^3/s (0.48 m^3/s) Sept. 29, 30, Oct. 1, 14, 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 11.40 ft (3.475 m), discharge, 4,800 ft^3/s (136 m^3/s), and flood of Dec. 26, 1973, reached a stage of 13.88 ft (4.231 m), discharge, 7,560 ft^3/s (214 m^3/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 1	0230	1730	49.0	7.70	2.347
Feb. 3	1730	2030	57.5	8.16	2.487
Feb. 17	2045	1720	48.7	7.69	2.344
Mar. 20	1745	3830	108	10.43	3.179
June 13	1530	*3900	110	10.50	3.200

Minimum discharge, 17 ft^3/s (0.48 m^3/s) Oct. 1, 14, 15; minimum gage height, 2.96 ft (0.902 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	91	44	96	952	177	199	189	230	76	82	33
2	23	75	86	91	429	194	173	171	187	68	59	34
3	23	66	89	106	1450	199	204	151	149	65	52	32
4	21	59	82	877	1080	184	279	135	151	72	49	30
5	20	53	79	693	660	180	238	122	224	70	51	29
6	20	52	71	418	485	173	238	113	227	63	79	28
7	20	51	65	321	355	405	206	106	182	59	130	27
8	20	46	64	273	279	482	184	101	153	66	110	27
9	19	42	64	223	576	371	189	95	141	68	88	27
10	19	40	56	165	537	304	187	86	558	80	72	27
11	19	38	64	150	385	264	166	80	505	98	60	26
12	19	37	59	140	297	291	158	76	656	158	54	26
13	19	35	55	130	255	285	149	72	2960	105	50	25
14	18	35	64	125	209	279	141	68	1540	85	47	25
15	18	33	114	115	182	320	129	65	790	76	45	25
16	19	33	106	110	255	423	120	62	540	74	42	24
17	19	33	85	105	977	609	124	60	492	82	42	24
18	20	32	77	150	1070	613	153	60	342	86	47	24
19	21	32	68	198	692	495	129	60	270	111	43	25
20	20	34	62	132	554	2100	124	63	217	136	39	25
21	20	35	55	283	509	1780	122	65	180	79	38	26
22	19	32	115	258	426	1040	115	61	153	67	36	47
23	21	31	206	169	339	726	108	61	135	66	35	40
24	23	33	339	174	294	547	103	60	118	72	35	30
25	21	35	250	145	255	439	100	62	108	59	36	28
26	30	32	194	110	214	412	187	462	98	53	33	44
27	853	33	167	90	201	327	264	261	92	50	34	108
28	521	42	144	100	187	267	285	187	86	47	37	56
29	224	42	124	95	---	235	246	147	83	49	33	40
30	152	39	102	113	---	209	211	297	82	59	32	35
31	116	---	91	228	---	201	---	288	---	80	33	---
TOTAL	2396	1271	3241	6383	14104	14531	5231	3886	11649	2379	1623	997
MEAN	77.3	42.4	105	206	504	469	174	125	388	76.7	52.4	33.2
MAX	853	91	339	877	1450	2100	285	462	2960	158	130	108
MIN	18	31	44	90	182	173	100	60	82	47	32	24
CFSM	.49	.27	.67	1.30	3.19	2.97	1.10	.79	2.46	.49	.33	.21
IN.	.56	.30	.76	1.50	3.32	3.42	1.23	.91	2.74	.56	.38	.23

CAL YR 1981 TOTAL 35160 MEAN 96.3 MAX 2140 MIN 18 CFSM .61 IN 8.28
WTR YR 1982 TOTAL 67691 MEAN 185 MAX 2960 MIN 18 CFSM 1.17 IN 15.94

02011460 BACK CREEK NEAR SUNRISE, VA

LOCATION.--Lat 38°14'43", long 79°46'08", Bath County, Hydrologic Unit 02080201, on right bank 900 ft (270 m) upstream from bridge on State Highway 600, 0.8 mi (1.3 km) upstream from Gap Run, and 4.8 mi (7.7 km) northeast of Sunrise.

DRAINAGE AREA.--56.7 mi² (146.9 km²).

PERIOD OF RECORD.--June 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,200.02 ft (670.566 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 93.4 ft³/s (2.645 m³/s), 22.37 in/yr (568 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,400 ft³/s (153 m³/s) Jan. 26, 1978, gage height, 6.80 ft (2.073 m); minimum, 1.5 ft³/s (0.042 m³/s) Sept. 13, 14, 1980; minimum gage height, 0.07 ft (0.021 m) July 21, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1200	1950	55.2	4.91	1.497
Jan. 31	2330	919	26.0	3.74	1.140
Feb. 3	1630	901	25.5	3.71	1.131
Feb. 17	1800	931	26.4	3.76	1.146
Mar. 20	----	Unknown		Unknown	
June 13	0930	*2780	78.7	5.51	1.679

Minimum discharge, 3.1 ft³/s (0.088 m³/s) Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	44	45	60	601	107	86	102	106	25	45	9.0
2	5.8	36	97	51	288	114	80	88	76	20	32	9.0
3	4.9	31	105	56	663	119	152	71	55	18	26	7.5
4	4.3	27	88	602	613	114	267	61	52	28	21	6.3
5	4.3	25	73	482	365	114	195	53	142	20	20	5.6
6	4.3	26	61	267	255	112	168	48	166	18	76	5.2
7	6.4	24	54	205	186	216	123	45	115	15	92	4.7
8	5.2	21	55	200	150	309	106	43	80	18	96	4.7
9	4.6	19	52	168	442	235	104	39	61	20	63	4.7
10	4.3	19	50	106	414	186	94	34	139	18	47	4.5
11	4.3	18	52	86	267	150	90	30	228	44	36	4.5
12	4.3	17	45	76	190	220	89	28	198	61	30	4.0
13	3.8	16	42	70	155	243	84	26	1610	35	25	3.8
14	3.8	15	43	64	121	220	77	24	597	27	22	3.8
15	3.6	14	56	58	104	200	66	22	300	26	20	3.8
16	3.6	14	61	52	151	210	61	22	188	66	16	3.5
17	3.3	14	54	43	648	480	70	20	135	140	15	3.3
18	3.6	14	55	50	558	470	108	20	102	120	21	3.3
19	4.6	14	46	52	334	300	110	20	82	112	15	3.3
20	4.6	14	46	46	276	1300	101	21	66	64	12	3.8
21	4.6	15	43	95	300	800	88	22	55	46	12	4.0
22	4.3	14	58	96	249	400	71	23	47	35	10	15
23	4.5	13	296	84	192	315	62	23	42	35	9.5	12
24	4.8	15	332	102	170	225	55	32	36	34	9.0	8.2
25	5.5	14	198	92	179	177	51	135	33	25	9.0	7.1
26	17	12	145	76	150	150	102	146	30	22	9.0	15
27	1070	19	116	66	135	123	157	98	28	18	8.2	64
28	322	53	94	64	117	102	175	71	25	18	9.0	28
29	142	50	76	55	---	92	150	56	27	23	8.2	18
30	85	40	57	54	---	83	123	126	28	19	7.1	14
31	59	---	51	264	---	86	---	164	---	50	6.7	---
TOTAL	1806.6	667	2646	3842	8273	7972	3265	1713	4849	1220	827.7	283.6
MEAN	58.3	22.2	85.4	124	295	257	109	55.3	162	39.4	26.7	9.45
MAX	1070	53	332	602	663	1300	267	164	1610	140	96	64
MIN	3.3	12	42	43	104	83	51	20	25	15	6.7	3.3
CFSM	1.03	.39	1.51	2.19	5.20	4.53	1.92	.98	2.86	.70	.47	.17
IN.	1.18	.44	1.74	2.52	5.43	5.23	2.14	1.12	3.18	.80	.54	.19

CAL YR 1981 TOTAL 22813.9 MEAN 62.5 MAX 1120 MIN 3.3 CFSM 1.10 IN 14.96
WTR YR 1982 TOTAL 37364.9 MEAN 102 MAX 1610 MIN 3.3 CFSM 1.80 IN 24.51

02011480 BACK CREEK ON ROUTE 600, NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°08'03", long 79°51'55", Bath County, Hydrologic Unit 02080201, on left bank 100 ft (30 m) downstream from bridge on State Highway 600, 2.8 mi (4.5 km) northeast of Mountain Grove, and 3.0 mi (4.8 km) upstream from Little Back Creek.

DRAINAGE AREA.--85.8 mi² (222.2 km²).

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,818.05 ft (554.142 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 2, 1979, at site 170 ft (52 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--9 years, 141 ft³/s (3.993 m³/s), 22.32 in/yr (567 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,420 ft³/s (210 m³/s) Dec. 26, 1973, gage height, 9.90 ft (3.018 m), from rating curve extended above 5,200 ft³/s (150 m³/s) on basis of runoff comparisons with nearby stations; minimum, 2.2 ft³/s (0.062 m³/s) Sept. 21, 22, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s (37 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1330	2910	82.4	7.07	2.155	Feb. 17	2030	1720	48.7	5.85	1.783
Jan. 4	1400	1540	43.6	5.63	1.716	Mar. 20	1400	*4830	137	8.61	2.624
Feb. 1	0200	1480	41.9	5.55	1.692	June 13	1230	4780	135	8.58	2.615
Feb. 3	1800	1770	50.1	5.91	1.801						

Minimum discharge, 3.0 ft³/s (0.085 m³/s) Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	76	78	102	1020	140	109	139	174	33	56	12
2	13	59	139	91	421	147	102	122	120	28	37	14
3	11	49	142	105	1160	153	145	104	91	24	29	11
4	9.6	45	126	1030	1100	149	276	92	84	35	24	10
5	7.5	41	112	802	562	149	205	80	168	32	27	9.6
6	5.1	46	99	401	367	147	180	72	200	25	114	9.0
7	5.7	43	90	286	258	290	155	67	145	20	125	7.9
8	8.6	36	91	267	198	437	148	65	113	22	113	7.2
9	7.5	31	88	222	554	322	148	58	95	29	82	6.8
10	8.3	27	80	147	584	245	138	51	337	29	59	6.5
11	10	24	83	110	353	208	127	44	356	44	43	6.5
12	7.9	22	76	105	245	279	123	42	388	67	38	5.8
13	6.0	21	62	100	198	315	118	40	2950	43	32	5.8
14	5.3	21	79	95	155	298	109	38	1200	34	29	5.8
15	5.1	23	105	90	136	298	98	37	457	29	25	4.0
16	4.6	20	112	80	189	338	91	34	270	38	20	4.2
17	5.7	19	102	70	1040	681	95	30	186	132	18	3.2
18	10	20	104	98	1030	703	134	29	138	101	21	4.5
19	11	20	90	106	526	437	138	30	111	118	19	5.0
20	7.9	24	80	95	413	2430	127	33	92	74	17	5.8
21	6.4	23	75	156	417	1470	115	33	74	53	17	6.5
22	5.7	21	108	172	346	703	100	35	63	41	14	21
23	6.8	16	392	147	264	413	89	37	55	37	14	18
24	8.6	21	562	160	222	279	84	35	46	40	14	14
25	10	22	318	130	225	210	78	128	42	33	14	11
26	29	20	222	113	190	184	142	215	40	25	11	28
27	1620	26	174	91	172	153	213	136	38	21	13	87
28	599	74	142	97	153	130	236	106	32	20	14	45
29	214	79	122	95	---	119	203	92	32	24	14	29
30	132	70	101	94	---	109	164	223	33	26	10	22
31	98	---	94	236	---	109	---	273	---	50	10	---
TOTAL	2884.4	1039	4248	5893	12498	12045	4190	2520	8130	1327	1073	426.1
MEAN	93.0	34.6	137	190	446	389	140	81.3	271	42.8	34.6	14.2
MAX	1620	79	562	1030	1160	2430	276	273	2950	132	125	87
MIN	4.6	16	62	70	136	109	78	29	32	20	10	3.2
CFSM	1.09	.40	1.60	2.21	5.20	4.53	1.63	.95	3.16	.50	.40	.17
IN.	1.25	.45	1.84	2.55	5.42	5.22	1.82	1.09	3.52	.58	.46	.18

CAL YR 1981 TOTAL 35362.4 MEAN 96.9 MAX 2060 MIN 3.5 CFSM 1.13 IN 15.32
WTR YR 1982 TOTAL 56273.5 MEAN 154 MAX 2950 MIN 3.2 CFSM 1.79 IN 24.39

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°04'10", long 79°53'50", Bath County, Hydrologic Unit 02080201, on left bank 0.3 mi (0.5 km) downstream from Cummings Run, 0.8 mi (1.3 km) downstream from bridge on State Highway 39, and 2.1 mi (3.4 km) south of Mountain Grove.

DRAINAGE AREA.--134 mi^2 (347 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,701.45 ft (518.602 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 184 ft^3/s (5.211 m^3/s), 18.65 in/yr (474 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s (360 m^3/s) Mar. 7, 1967, gage height, 10.77 ft (3.283 m), from rating curve extended above 4,000 ft^3/s (110 m^3/s) on basis of slope-area measurements at gage heights 7.39 ft (2.252 m), 9.05 ft (2.758 m), and 9.35 ft (2.850 m); minimum, 1.5 ft^3/s (0.042 m^3/s) Aug. 18, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft^3/s (54 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)	Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)
Oct. 27	1330	3250	92.0	6.66	2.030	Feb. 17	2030	2350	66.6	5.91	1.801
Jan. 4	1315	2080	58.9	5.67	1.728	Mar. 20	1530	5320	151	7.91	2.411
Feb. 1	0300	1910	54.1	5.50	1.676	June 13	1015	*6300	178	8.36	2.548
Feb. 3	1745	2460	69.7	6.00	1.829						

Minimum discharge, 5.0 ft^3/s (0.14 m^3/s) Sept. 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	99	88	117	1410	200	168	228	272	50	85	17
2	11	78	189	105	670	210	155	195	195	41	59	19
3	11	65	210	123	1640	220	204	162	140	37	46	16
4	11	58	174	1390	1490	210	395	138	125	48	39	15
5	9.4	52	145	1120	777	210	330	123	225	47	37	14
6	8.9	53	125	596	509	220	294	109	276	37	195	13
7	8.9	51	111	410	370	500	237	103	216	30	290	12
8	11	45	109	366	290	620	210	97	165	39	225	11
9	11	39	103	314	657	500	210	88	136	56	150	11
10	11	35	92	270	770	390	201	78	570	86	111	10
11	12	31	94	200	486	330	186	69	616	129	83	10
12	12	30	85	170	339	450	180	65	762	129	72	9.5
13	9.4	28	70	150	262	500	174	62	4070	78	60	9.0
14	8.9	28	88	140	213	460	162	56	1560	60	51	9.5
15	9.4	29	134	130	177	460	145	55	670	51	45	8.0
16	8.9	28	152	110	234	544	132	51	395	58	37	6.5
17	9.4	25	134	90	1370	975	134	46	279	157	34	6.0
18	12	25	127	94	1400	959	180	44	207	125	37	5.5
19	15	26	105	94	726	596	186	44	162	160	33	7.0
20	12	29	94	94	557	2770	177	45	134	109	27	8.0
21	11	28	86	160	526	1850	160	45	111	78	25	9.5
22	10	27	105	228	441	999	142	46	95	65	23	24
23	11	24	492	186	334	636	127	46	85	83	19	22
24	12	27	823	210	280	441	119	46	73	117	20	17
25	14	27	480	190	280	343	115	125	66	70	20	14
26	27	26	322	170	260	298	237	234	62	51	17	28
27	1880	28	249	120	230	249	366	162	60	38	18	117
28	792	72	195	130	215	213	400	127	51	34	20	70
29	306	92	155	115	---	189	334	109	51	37	19	46
30	183	81	123	111	---	174	269	326	53	44	17	34
31	127	---	113	265	---	171	---	375	---	70	16	---
TOTAL	3582.4	1286	5572	7968	16913	16887	6329	3499	11882	2214	1930	598.5
MEAN	116	42.9	180	257	604	545	211	113	396	71.4	62.3	20.0
MAX	1880	99	823	1390	1640	2770	400	375	4070	160	290	117
MIN	7.2	24	70	90	177	171	115	44	51	30	16	5.5
CFSM	.87	.32	1.34	1.92	4.51	4.07	1.58	.84	2.96	.53	.47	.15
IN.	.99	.36	1.55	2.21	4.70	4.69	1.76	.97	3.30	.61	.54	.17

CAL YR 1981 TOTAL 48145.3 MEAN 132 MAX 2830 MIN 6.7 CFSM .99 IN 13.37
WTR YR 1982 TOTAL 78660.9 MEAN 216 MAX 4070 MIN 5.5 CFSM 1.61 IN 21.84

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 31.0°C Aug. 5, 11, 1980; minimum recorded, 0.0°C on many days during winter periods in 1979, 1981, and Jan. 23, 24, Feb. 7, 1982.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 29.5°C July 16; minimum recorded, 0.0°C Jan. 23, 24, Feb. 7.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	13.5	16.0	13.0	11.0	12.0	4.0	3.5	4.0	4.0	1.5	2.5
2	16.5	11.0	13.5	14.0	10.0	12.0	7.0	4.0	5.5	3.0	.5	2.0
3	14.5	10.0	12.0	15.0	11.5	13.0	6.5	5.0	5.5	3.0	2.0	2.5
4	13.5	9.0	11.5	14.0	11.5	13.0	5.5	4.5	5.0	6.0	3.0	4.5
5	16.0	11.5	14.0	14.5	11.5	13.0	5.5	4.0	5.0	5.0	3.5	4.5
6	19.0	14.5	16.5	13.0	9.5	12.0	4.5	3.0	3.5	5.0	3.5	4.0
7	17.5	13.0	14.5	9.5	7.5	8.5	5.5	2.0	3.5	7.0	5.0	5.5
8	16.0	11.5	13.5	9.5	5.0	7.5	6.5	4.0	5.5	4.5	2.0	3.0
9	14.0	9.0	12.0	9.0	7.0	8.0	4.0	1.5	2.5	2.0	.5	1.0
10	12.5	9.5	11.5	10.5	7.0	8.5	1.5	.5	1.0	.5	.5	.5
11	14.5	11.0	13.0	10.0	7.0	8.5	1.5	.5	1.0	.5	.5	.5
12	14.0	12.5	13.0	8.5	5.0	7.0	3.0	1.0	2.0	.5	.5	.5
13	16.0	11.0	13.0	7.5	3.5	5.5	2.0	.5	1.0	.5	.5	.5
14	14.5	8.5	11.5	7.5	3.0	5.5	2.0	.5	1.5	.5	.5	.5
15	14.0	9.0	12.0	8.0	4.0	6.0	3.0	2.0	2.5	.5	.5	.5
16	15.0	12.0	13.5	7.5	4.0	6.0	3.5	2.0	2.5	.5	.5	.5
17	15.0	9.5	12.0	9.5	7.0	8.0	2.5	1.5	2.0	.5	.5	.5
18	14.0	11.5	12.5	9.0	7.0	8.0	2.5	.5	2.0	.5	.5	.5
19	11.5	8.5	10.0	9.0	5.0	7.0	2.0	.5	.5	.5	.5	.5
20	11.0	5.5	8.5	9.0	6.5	8.5	.5	.5	.5	.5	.5	.5
21	12.0	6.5	9.0	6.0	4.0	5.0	.5	.5	.5	.5	.5	.5
22	12.5	9.0	11.0	5.0	2.0	3.5	1.0	.5	.5	.5	.5	.5
23	12.0	9.0	11.5	3.0	.5	2.0	3.5	1.0	2.0	.5	.0	.5
24	11.0	7.0	9.0	3.0	1.0	2.0	5.5	4.0	4.5	1.0	.0	.5
25	8.5	7.0	8.0	5.0	2.5	3.5	5.0	3.5	4.5	.5	.5	.5
26	11.0	8.5	10.0	5.0	1.5	3.0	3.5	2.5	3.0	.5	.5	.5
27	13.0	11.5	12.0	7.0	3.5	5.0	5.0	3.5	4.0	---	---	---
28	14.0	11.5	12.5	5.5	3.5	4.5	5.0	2.5	3.5	.5	.5	.5
29	13.0	10.0	11.5	5.0	2.5	3.5	4.5	2.0	3.5	.5	.5	.5
30	12.0	11.0	11.5	3.5	1.5	3.0	2.5	.5	1.5	1.5	.5	1.0
31	13.0	10.5	11.5	---	---	---	1.5	.5	.5	2.0	.5	1.5
MONTH	19.0	5.5	12.0	15.0	.5	7.0	7.0	.5	2.5	7.0	.0	1.5

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.0	2.0	2.5	7.0	2.0	4.5	13.0	6.5	9.5	15.5	9.0	12.0
2	3.5	2.0	3.0	8.5	3.5	6.0	14.0	7.0	10.5	14.0	11.0	12.5
3	5.0	3.5	4.0	6.0	5.0	5.5	14.0	10.0	11.5	17.0	9.5	13.0
4	5.5	4.5	5.0	5.0	4.0	4.5	11.0	6.5	8.5	18.0	9.5	13.5
5	5.0	4.0	4.5	9.0	4.5	6.5	10.0	5.5	8.0	19.0	10.5	14.5
6	5.0	2.5	4.5	7.0	5.0	5.5	8.5	4.5	7.0	19.5	12.0	15.5
7	3.5	.0	2.0	5.0	3.5	5.0	8.5	2.0	5.0	17.5	14.0	16.0
8	4.0	.5	2.0	6.5	2.5	4.0	7.5	4.0	5.5	17.0	14.0	15.5
9	4.5	3.5	3.5	7.5	3.0	5.0	8.5	4.5	6.5	19.5	11.5	15.0
10	4.0	2.0	3.0	7.0	3.5	5.5	10.5	4.5	7.0	20.0	11.5	15.5
11	4.5	2.0	3.0	9.5	5.5	7.5	10.0	5.0	7.5	21.5	12.5	16.5
12	3.5	1.5	2.5	11.0	6.5	9.0	11.0	4.5	8.0	22.5	13.5	17.5
13	5.0	2.0	3.5	9.0	7.0	8.0	12.0	8.5	10.0	21.5	14.5	18.0
14	5.0	.5	2.5	8.5	6.0	7.0	14.5	8.0	11.0	23.5	15.0	19.0
15	6.0	1.5	3.5	7.0	5.5	6.5	13.5	9.0	11.0	21.0	15.5	18.5
16	6.0	5.0	5.5	6.5	5.0	6.0	14.0	9.0	11.5	24.0	15.5	19.5
17	5.5	4.0	5.0	11.5	6.5	8.5	14.5	11.0	13.0	23.5	16.0	20.0
18	4.5	3.5	4.0	11.5	6.5	9.0	15.5	9.0	12.0	23.0	17.0	19.5
19	5.0	1.0	4.0	10.5	7.0	9.0	14.5	9.0	11.5	23.0	17.0	19.5
20	7.0	4.0	5.5	9.0	7.5	8.0	13.0	9.5	11.5	23.0	17.0	20.0
21	6.5	4.5	5.5	9.5	7.5	8.0	16.0	11.0	13.0	21.5	17.5	19.5
22	5.0	3.5	4.5	9.0	6.0	7.5	14.5	9.0	11.5	24.0	17.5	20.5
23	7.5	2.5	5.0	10.0	5.5	7.5	15.0	7.0	11.0	23.5	19.0	21.0
24	9.0	4.5	6.5	9.5	5.5	7.5	16.0	7.5	12.0	23.0	19.5	21.0
25	7.0	4.0	5.5	11.5	6.5	9.0	15.5	9.0	12.5	24.0	18.5	21.0
26	4.0	1.5	3.0	9.5	6.0	7.5	14.0	12.0	13.0	21.0	17.5	19.5
27	2.5	2.0	2.0	7.0	4.0	5.0	12.0	11.0	11.5	19.0	17.0	18.0
28	7.0	2.0	4.0	8.5	2.0	5.0	15.0	9.0	12.0	22.5	17.0	19.5
29	---	---	---	10.0	3.0	6.5	14.5	8.5	11.5	24.0	18.5	21.0
30	---	---	---	11.0	5.0	8.0	14.5	9.0	11.5	21.0	17.5	19.5
31	---	---	---	11.0	7.5	9.0	---	---	---	21.5	16.5	18.5
MONTH	9.0	.0	4.0	11.5	2.0	7.0	16.0	2.0	10.0	24.0	9.0	17.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNF			JULY			AUGUST			SEPTEMBEP	
1	18.0	16.5	17.5	25.5	17.5	21.0	27.0	21.0	24.0	22.5	18.5	20.5
2	22.5	15.5	18.5	---	---	---	25.0	20.0	22.5	---	---	---
3	20.0	16.0	18.0	22.0	19.0	20.5	28.0	20.5	24.0	26.0	20.0	22.5
4	17.5	16.5	17.0	24.0	19.5	21.5	27.5	21.0	24.5	24.0	17.0	20.0
5	18.0	15.5	16.5	24.5	20.5	22.5	27.5	22.5	25.0	23.0	16.0	19.5
6	16.0	14.5	15.0	27.0	20.5	23.5	25.0	20.5	23.0	23.5	16.0	19.5
7	20.5	14.5	17.0	28.0	21.0	24.0	21.0	19.0	20.0	23.5	16.5	20.0
8	21.5	15.5	18.5	26.0	22.0	23.5	23.0	18.5	20.5	24.5	18.5	21.0
9	22.0	17.0	19.5	25.5	21.0	22.5	22.0	20.5	21.0	24.5	19.5	21.5
10	20.5	15.5	17.0	27.5	20.0	22.5	26.5	19.5	22.5	23.0	18.0	20.0
11	19.5	14.5	16.5	25.0	19.0	21.0	24.5	19.5	22.0	25.0	18.0	21.0
12	16.5	13.5	15.0	26.5	20.5	23.0	25.0	20.0	22.0	24.5	17.0	20.5
13	14.0	12.5	13.0	23.5	20.0	22.0	24.5	18.5	21.5	23.5	17.5	20.5
14	16.0	12.0	14.0	25.5	20.5	22.5	25.5	19.5	22.0	24.5	19.0	22.0
15	17.5	12.5	15.0	27.5	21.0	24.0	27.0	19.5	23.0	27.0	20.0	23.0
16	19.5	14.5	17.0	29.5	22.5	25.5	27.5	20.5	23.5	26.5	20.0	22.0
17	---	---	---	26.5	21.5	24.5	23.5	20.5	22.0	23.5	17.5	20.0
18	21.5	15.5	18.5	27.0	21.0	24.5	27.0	19.0	22.5	21.0	16.5	18.5
19	23.0	17.0	19.5	26.5	21.5	24.0	26.5	19.5	23.0	18.0	16.0	17.0
20	23.5	16.5	19.5	26.5	21.5	24.0	26.5	20.5	23.5	17.5	16.0	17.0
21	22.0	16.0	18.5	28.5	21.0	24.5	27.0	21.0	23.5	17.0	14.5	15.5
22	21.0	16.5	18.5	27.5	22.0	25.0	24.5	17.5	21.0	15.5	13.5	14.5
23	23.5	16.5	19.5	27.0	20.5	24.0	23.0	18.0	20.5	15.5	12.0	13.5
24	22.0	16.0	19.0	26.0	20.0	22.5	25.5	19.5	22.5	16.0	12.0	14.0
25	24.0	17.0	20.5	27.5	20.5	24.0	27.5	20.5	23.5	17.0	13.5	15.5
26	24.0	18.5	21.0	27.5	21.0	24.5	26.5	18.0	22.0	15.5	14.0	14.5
27	24.5	19.5	21.5	28.0	21.5	25.0	21.0	18.0	19.0	16.0	13.5	14.5
28	27.5	19.5	23.0	26.0	22.0	24.0	24.0	17.0	19.5	17.5	14.0	15.5
29	26.5	21.0	23.0	28.0	20.5	24.0	---	---	---	17.0	14.5	15.5
30	25.5	20.0	22.0	24.0	21.0	22.5	19.0	16.0	17.5	18.5	14.5	16.0
31	---	---	---	24.5	21.0	23.0	19.5	17.5	18.5	---	---	---
MONTH	27.5	12.0	18.0	29.5	17.5	23.5	28.0	16.0	22.0	27.0	12.0	18.5
YEAR	29.5	.0	12.0									

02011795 LAKE MOOMAW NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°57'04", long 79°59'21", Alleghany County, Hydrologic Unit 02080201, in control tower at Gathright Dam on Jackson River, 0.9 mi (1.4 km) upstream from Cedar Creek, 7.6 mi (12.2 km) southwest of Hot Springs, and 19 mi (31 km) upstream from Covington.

DRAINAGE AREA.--344 mi^2 (891 km^2).

PERIOD OF RECORD.--December 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers benchmark).

REMARKS.--Lake is formed by rolled rockfill dam with an impervious compacted earth (clay) core. Spillway with crest at elevation 1,667.5 ft (508.25 m) is in a divide about 2.5 mi (4.0 km) south of the dam, ungated, and 2,450 ft (747 m) long with a base width of 100 ft (30 m). Except for flood flows, all discharge will be through a diversion tunnel with the invert of the entrance being in an intake tower 260 ft (79.2 m) high. Elevation of invert is 1,430.5 ft (436.02 m). Portals in the tower at nine levels permit oxygenated water from the surface and cold water from the bottom of the lake to be mixed for water-quality control. Sluice gates in the tower control flood flow releases. Storage began Dec. 10, 1979. Total capacity at top of dam, elevation 1,684.5 ft (513.44 m) is 502,600 acre-ft (620 hm^3) of which 81,100 acre-ft (100 hm^3) is above spillway crest. Capacity at maximum conservation pool, elevation, 1,582.0 ft (482.19 m) is 123,700 acre-ft (153 hm^3); capacity at minimum conservation pool, elevation 1,554.0 ft (473.66 m) is 63,000 acre-ft (77.7 hm^3). Lake is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 138,293 acre-ft (171 hm^3) June 14, 1982, elevation, 1,587.6 ft (483.90 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 138,293 acre-ft (171 hm^3) June 14, elevation, 1,587.6 ft (483.90 m); minimum (lake is still in the initial filling stage), 79,658 acre-ft (98.2 hm^3) Oct. 21-23, elevation, 1,562.7 ft (476.31 m).

MONTHEND ELEVATION AND CONTENTS AT 1500, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1564.9	84200	
Oct. 31	1568.4	91680	+7480
Nov. 30	1569.6	94310	+2630
Dec. 31	1577.3	112110	+17800
CAL YR 1981			+67930
Jan. 31	1583.2	126800	+14690
Feb. 28	1582.0	123740	-3060
Mar. 31	1582.0	123740	0
Apr. 30	1582.1	123940	+200
May 31	1582.2	124250	+310
June 30	1581.1	121470	-2780
July 31	1579.4	117240	-4230
Aug. 31	1576.2	109470	-7770
Sept. 30	1573.1	102210	-7260
WTR YR 1982			+18010

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°56'54", long 79°56'58", Alleghany County, Hydrologic Unit 02080201, on right bank 0.4 mi (0.6 km) upstream from Cedar Creek, 0.5 mi (0.8 km) downstream from Gathright Dam and Moomaw Lake, and 7.3 mi (11.7 km) southwest of Hot Springs.

DRAINAGE AREA.--345 mi² (894 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1973, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795).

AVERAGE DISCHARGE.--9 years, 455 ft³/s (12.89 m³/s), 17.91 in/yr (455 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) Dec. 26, 1973, result of cofferdam failure during construction of Gathright Dam, gage height, 18.77 ft (5.721 m), from rating curve extended above 4,400 ft³/s (120 m³/s) on basis of slope-area measurement of peak flow; minimum, 3.0 ft³/s (0.085 m³/s) July 12, 1979, result of gate closure at Gathright Dam, gage height, 7.78 ft (2.371 m); minimum daily, 47 ft³/s (1.33 m³/s) Sept. 2, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 17.20 ft (5.243 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,650 ft³/s (188 m³/s) June 14, gage height, 14.00 ft (4.267 m); minimum, 6.5 ft³/s (0.18 m³/s) Nov. 30, gage height, 7.84 ft (2.390 m); minimum daily, 49 ft³/s (1.39 m³/s) Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	67	61	62	1300	546	384	521	1010	268	269	193
2	56	68	61	64	2240	544	457	521	555	258	269	197
3	56	67	61	65	2290	543	457	521	303	258	269	197
4	56	67	61	67	3170	545	458	356	317	264	269	197
5	57	67	61	67	3200	544	646	356	336	266	267	197
6	57	67	61	548	1830	545	634	272	336	267	251	197
7	57	67	61	890	1830	606	808	234	652	228	247	197
8	57	67	61	732	953	1250	808	230	706	269	247	172
9	93	67	61	607	494	1820	665	231	396	269	247	197
10	261	67	61	611	902	1030	445	230	997	269	247	197
11	261	67	61	442	1590	700	258	206	1560	269	215	197
12	259	67	61	308	1560	706	258	229	1210	269	256	197
13	259	67	61	292	1190	706	301	229	1960	269	254	197
14	258	67	61	292	871	842	328	230	4750	269	254	197
15	258	67	53	262	467	1200	399	230	4960	269	254	197
16	258	65	61	247	428	1410	396	230	4250	269	254	197
17	258	60	61	247	1460	1600	328	230	1910	269	256	197
18	258	62	61	246	2900	1710	328	229	692	268	258	197
19	227	62	61	244	2710	1570	486	228	427	269	258	197
20	49	62	61	243	1470	2220	589	229	425	269	258	197
21	51	62	61	244	934	4020	473	230	323	269	258	197
22	54	62	61	245	1270	4000	325	233	269	269	258	197
23	54	62	61	322	974	3440	248	233	269	269	258	197
24	55	62	61	472	829	2080	210	232	269	269	258	197
25	56	62	61	473	710	1190	210	233	269	269	258	197
26	56	61	61	473	543	995	373	231	269	269	258	197
27	64	61	61	329	543	713	814	230	269	269	258	197
28	67	61	62	247	544	713	1010	336	268	269	258	197
29	67	61	61	247	---	604	1010	385	267	269	258	189
30	67	53	62	247	---	540	791	612	275	269	229	---
31	67	---	62	247	---	408	---	1010	---	269	229	---
TOTAL	3808	1924	1886	10082	39202	39340	14897	9707	30499	8264	7908	5873
MEAN	123	64.1	60.8	325	1400	1269	497	313	1017	267	255	196
MAX	261	68	62	890	3200	4020	1010	1010	4960	269	269	197
MIN	49	53	53	62	428	408	210	206	267	228	215	172
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122
MEAN‡	245	108	350	564	1345	1269	500	318	970	198	129	74
CFSM‡	.71	.31	1.01	1.63	3.90	3.68	1.45	.92	2.81	.57	.37	.21
IN‡	.82	.35	1.17	1.89	4.06	4.24	1.62	1.06	3.14	.66	.43	.24

CAL YR 1981 TOTAL 71854 MEAN 197 MAX 2830 MIN 47 MEAN‡ 291 CFSM‡ .84 IN‡ 11.45
WTR YR 1982 TOTAL 173390 MEAN 475 MAX 4960 MIN 49 MEAN‡ 500 CFSM‡ 1.45 IN‡ 19.68

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1978 to current year.
pH: October 1978 to current year.
WATER TEMPERATURES: October 1978 to current year.
DISSOLVED OXYGEN: October 1978 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments. The intake tower at Gathright Dam permits selective withdrawal of water from one or more reservoir depths.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 225 micromhos Apr. 13, 1981; minimum recorded, 78 micromhos May 14, 1979.
pH: Maximum, 8.6 units Jan. 29, 1982; minimum, 7.0 units on several days in 1979 and 1980.
WATER TEMPERATURES: Maximum, 28.0°C Aug. 1, 2, 1979; minimum, 0.0°C Feb. 16, 17, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 223 micromhos Nov. 30; minimum recorded, 100 micromhos Apr. 30.
pH: Maximum, 8.6 units Jan. 29; minimum, 7.3 units Oct. 15, 16, 18, June 15-18.
WATER TEMPERATURES: Maximum, 22.5°C Aug. 6, 20, 21; minimum, many days in January and February.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	168	166	167	169	168	169	174	172	173	168	167	167
2	168	165	167	170	168	169	174	172	173	168	167	168
3	168	166	166	169	167	168	174	173	173	169	166	167
4	166	164	165	168	166	167	175	173	174	170	164	168
5	167	164	165	168	167	168	175	173	174	169	167	168
6	166	163	165	176	169	173	174	173	174	167	155	160
7	166	165	166	170	168	169	174	173	173	156	155	155
8	166	164	165	170	169	169	175	173	174	155	154	154
9	166	159	163	169	168	169	174	173	174	154	153	154
10	161	159	160	169	168	169	174	173	174	153	152	153
11	161	159	160	170	167	169	174	173	173	153	151	152
12	160	158	159	169	167	168	174	173	173	153	152	153
13	159	158	159	172	168	169	173	172	172	154	153	153
14	162	158	160	169	168	169	173	171	172	154	153	153
15	177	159	170	170	168	169	221	172	175	154	153	153
16	175	158	161	170	169	170	173	171	172	154	153	154
17	159	157	158	173	170	171	173	171	172	153	152	153
18	160	158	159	171	170	170	173	171	172	154	153	153
19	168	158	160	172	171	171	172	171	171	153	152	152
20	167	165	166	172	170	172	170	170	170	153	152	152
21	167	165	166	173	171	173	171	169	170	153	152	152
22	168	166	167	174	172	174	170	168	169	153	152	152
23	168	166	167	174	173	174	173	169	170	153	150	151
24	168	166	167	174	172	173	170	169	169	---	---	---
25	167	166	167	174	172	173	170	168	169	150	148	149
26	170	165	167	174	172	173	168	167	168	149	147	148
27	187	167	175	173	171	172	168	167	167	151	146	149
28	167	165	166	173	172	172	168	166	167	151	150	150
29	167	165	166	173	171	172	168	167	167	160	150	154
30	167	165	166	223	172	175	168	166	167	159	153	155
31	169	167	168	---	---	---	167	166	167	153	152	153
MONTH	187	157	165	223	166	171	221	166	171	170	146	155

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	153	148	151	131	129	130	117	112	114	111	109	110
2	149	148	149	129	123	127	115	112	113	111	107	110
3	149	147	148	127	125	126	115	110	113	111	109	110
4	148	144	146	128	126	127	114	112	113	153	109	118
5	148	142	145	127	124	125	113	110	111	115	111	114
6	148	146	147	124	123	124	170	109	117	117	111	115
7	147	146	146	124	121	123	111	108	109	---	---	---
8	149	146	147	121	116	118	114	107	110	---	---	---
9	150	149	149	117	116	117	131	109	113	---	---	---
10	151	148	149	179	115	121	118	110	114	---	---	---
11	150	147	149	115	114	115	120	115	117	130	112	117
12	148	145	147	115	114	115	119	114	117	120	114	116
13	149	143	147	115	113	115	118	114	116	118	112	116
14	148	143	145	115	113	114	116	114	115	122	112	117
15	148	146	147	113	112	112	119	112	114	121	115	119
16	148	147	148	113	111	112	117	111	114	121	115	119
17	150	140	146	112	111	112	117	113	115	121	117	120
18	140	131	135	112	111	112	117	113	115	123	117	121
19	136	131	132	112	111	112	116	110	113	123	119	121
20	143	130	136	113	110	112	115	111	112	123	119	122
21	142	134	139	112	109	110	115	110	112	125	119	122
22	136	124	129	111	106	109	118	112	115	124	122	123
23	135	122	128	111	107	110	120	115	117	124	120	122
24	138	123	133	114	107	111	122	118	119	124	120	122
25	123	119	121	113	109	112	121	117	119	124	120	123
26	124	122	122	114	108	112	121	113	117	124	120	123
27	130	124	128	114	110	112	117	104	110	124	120	123
28	130	129	130	114	111	112	108	104	106	124	116	121
29	---	---	---	114	111	113	106	102	105	123	119	121
30	---	---	---	114	111	113	108	100	107	123	119	121
31	---	---	---	119	110	114	---	---	---	119	115	118
MONTH	153	119	141	179	106	116	170	100	113	153	107	119

DAY		JUNE			JULY			AUGUST			SEPTEMBER	
1	121	115	117	128	124	126	132	128	130	142	140	141
2	123	117	121	128	124	127	132	126	129	142	140	141
3	125	121	123	130	122	127	136	130	133	144	140	142
4	125	119	123	128	124	127	---	---	---	142	140	142
5	126	124	125	128	122	126	---	---	---	142	142	142
6	126	122	125	128	122	126	132	130	131	144	142	142
7	136	120	123	148	122	127	134	128	131	144	140	142
8	124	114	118	128	122	126	134	130	132	158	142	143
9	146	116	121	---	---	---	136	132	134	142	140	142
10	120	108	114	---	---	---	136	132	134	142	142	142
11	110	108	109	126	122	125	178	132	137	142	142	142
12	112	108	110	126	122	125	134	134	134	142	140	142
13	112	108	110	126	122	125	134	132	132	142	142	142
14	114	108	111	126	122	125	136	134	135	142	140	142
15	114	112	113	126	120	125	136	134	134	144	140	142
16	120	110	115	126	122	124	136	134	135	144	140	143
17	120	114	118	128	122	126	136	134	134	144	140	142
18	130	118	125	128	122	126	136	134	134	144	140	143
19	130	126	128	128	124	127	136	134	134	144	142	144
20	130	126	127	132	126	128	136	134	135	144	140	144
21	130	126	128	130	126	129	138	134	136	144	140	143
22	130	126	128	130	128	129	136	134	135	144	140	143
23	130	124	128	132	130	130	---	---	---	144	140	143
24	128	124	127	130	128	129	---	---	---	144	140	142
25	130	126	127	130	128	130	---	---	---	144	140	142
26	132	122	127	130	126	129	138	136	137	146	140	143
27	128	122	127	134	128	130	140	138	139	144	142	143
28	128	126	127	134	128	131	140	138	139	144	140	142
29	128	122	127	134	128	132	140	138	138	144	142	143
30	128	122	126	134	128	131	140	138	140	144	140	143
31	---	---	---	132	128	130	142	138	140	---	---	---
MONTH	146	108	122	148	120	128	178	126	135	158	140	142
YEAR	223	100	140									

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.9	8.0	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.7	7.8
2	8.1	7.9	8.0	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.8	7.8
3	8.1	7.9	8.0	7.8	7.7	7.8	7.9	7.8	7.8	7.9	7.7	7.8
4	8.1	7.9	8.0	7.9	7.7	7.8	7.9	7.8	7.8	7.8	7.7	7.7
5	8.1	7.9	8.0	7.9	7.7	7.8	7.9	7.8	7.8	7.8	7.7	7.8
6	8.0	7.9	7.9	8.0	7.7	7.9	7.9	7.8	7.8	7.8	7.7	7.7
7	8.1	7.9	8.0	8.0	7.9	7.9	---	---	---	7.7	7.7	7.7
8	8.1	7.9	8.0	7.9	7.9	7.9	7.9	7.8	7.8	7.7	7.7	7.7
9	8.1	7.6	7.9	8.0	7.8	7.9	7.9	7.8	7.8	7.8	7.7	7.7
10	7.6	7.6	7.6	7.9	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.8
11	7.6	7.5	7.5	7.9	7.8	7.8	7.9	7.8	7.9	7.8	7.8	7.8
12	7.5	7.4	7.5	7.8	7.8	7.8	8.0	7.9	7.9	7.8	7.8	7.8
13	7.4	7.4	7.4	7.8	7.7	7.8	7.9	7.8	7.9	7.8	7.7	7.8
14	7.5	7.4	7.4	7.8	7.7	7.8	7.9	7.8	7.8	7.8	7.7	7.7
15	7.7	7.3	7.5	7.8	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.7
16	7.6	7.3	7.5	7.8	7.8	7.8	7.9	7.8	7.8	7.7	7.7	7.7
17	7.5	7.4	7.4	7.9	7.8	7.8	7.9	7.8	7.8	7.7	7.7	7.7
18	7.4	7.3	7.4	7.9	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.7
19	7.7	7.4	7.5	7.9	7.8	7.8	7.9	7.8	7.8	7.7	7.7	7.7
20	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.7	7.7	7.7
21	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	7.7	7.6	7.7
22	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.8	7.7	7.6	7.6
23	7.8	7.8	7.8	7.9	7.8	7.9	7.9	7.8	7.8	7.7	7.6	7.6
24	7.9	7.8	7.8	7.9	7.9	7.9	7.9	7.7	7.8	---	---	---
25	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.7	7.8	7.7	7.6	7.6
26	7.8	7.8	7.8	8.0	7.9	7.9	7.9	7.7	7.8	7.7	7.6	7.7
27	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.7	7.8	7.7	7.6	7.7
28	7.9	7.8	7.8	8.0	7.9	7.9	---	---	---	7.7	7.6	7.7
29	7.8	7.7	7.8	8.0	7.9	7.9	7.9	7.7	7.8	8.6	7.6	8.2
30	7.8	7.7	7.7	8.0	7.9	7.9	7.8	7.7	7.8	8.5	8.2	8.4
31	7.8	7.7	7.7	---	---	---	7.8	7.7	7.8	8.2	8.1	8.1
MONTH	8.1	7.3	7.7	8.0	7.7	7.8	8.0	7.7	7.8	8.6	7.6	7.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.2	8.1	8.1	7.9	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.8
2	8.1	8.0	8.0	7.9	7.8	7.8	7.9	7.8	7.8	7.8	7.7	7.8
3	8.1	8.0	8.0	7.8	7.8	7.8	8.1	7.8	7.9	7.8	7.7	7.8
4	8.1	8.0	8.0	7.8	7.8	7.8	8.0	7.8	7.9	8.2	7.7	7.9
5	8.0	8.0	8.0	7.8	7.8	7.8	7.9	7.8	7.8	8.1	7.9	8.0
6	8.0	8.0	8.0	7.8	7.8	7.8	8.4	7.8	8.0	8.2	7.9	8.0
7	8.0	8.0	8.0	7.8	7.8	7.8	8.0	7.8	7.9	---	---	---
8	8.1	8.0	8.1	7.9	7.8	7.8	7.9	7.8	7.8	---	---	---
9	8.2	8.1	8.1	7.8	7.8	7.8	8.3	7.8	7.9	---	---	---
10	8.1	8.0	8.0	8.3	7.7	7.9	8.1	7.9	7.9	---	---	---
11	8.0	8.0	8.0	7.8	7.8	7.8	8.1	7.8	7.9	8.3	7.9	8.0
12	8.0	8.0	8.0	7.8	7.7	7.8	8.1	7.8	7.9	8.1	7.8	8.0
13	8.0	7.9	8.0	7.8	7.7	7.8	8.0	7.8	7.9	8.2	7.9	8.1
14	8.0	7.9	8.0	7.8	7.8	7.8	8.1	7.8	7.9	8.2	7.9	8.0
15	8.0	7.9	8.0	7.8	7.7	7.8	8.0	7.8	7.9	8.2	8.0	8.1
16	8.0	7.9	7.9	7.8	7.7	7.8	8.0	7.8	7.9	8.2	8.0	8.1
17	7.9	7.8	7.9	7.8	7.8	7.8	8.0	7.8	7.9	8.2	7.9	8.0
18	7.9	7.9	7.9	7.8	7.7	7.8	8.1	7.8	7.9	8.2	7.9	8.0
19	7.9	7.8	7.9	7.8	7.7	7.8	8.0	7.8	7.9	8.3	7.9	8.0
20	7.9	7.8	7.9	7.8	7.7	7.8	7.9	7.8	7.8	8.2	7.9	8.0
21	7.9	7.8	7.9	7.8	7.7	7.8	8.1	7.8	7.9	8.1	7.8	7.9
22	7.9	7.8	7.8	7.9	7.8	7.8	8.1	7.8	7.9	7.9	7.8	7.8
23	7.9	7.8	7.8	7.8	7.7	7.8	8.1	7.8	8.0	7.9	7.8	7.8
24	7.9	7.8	7.8	8.0	7.7	7.8	8.1	7.9	8.0	8.2	7.8	7.9
25	7.9	7.9	7.9	7.8	7.7	7.7	8.1	7.9	8.0	8.1	7.9	8.0
26	---	---	---	7.9	7.7	7.8	8.0	7.8	7.9	8.2	7.9	8.0
27	7.8	7.8	7.8	7.9	7.8	7.9	7.8	7.8	7.8	8.2	8.0	8.1
28	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.8	7.8	8.2	7.9	8.0
29	---	---	---	7.8	7.8	7.8	7.8	7.8	7.8	8.2	8.0	8.1
30	---	---	---	7.8	7.8	7.8	7.9	7.7	7.8	8.2	7.8	8.0
31	---	---	---	7.9	7.8	7.8	---	---	---	8.0	7.8	7.9
MONTH	8.2	7.8	8.0	8.3	7.7	7.8	8.4	7.7	7.9	8.3	7.7	8.0

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNF			JULY			AUGUST			SEPTEMBER	
1	7.9	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.8	7.6	7.7
2	8.2	7.9	8.0	7.9	7.8	7.9	8.0	7.8	7.9	7.8	7.6	7.7
3	8.2	8.0	8.1	7.9	7.7	7.8	7.9	7.8	7.8	7.9	7.7	7.8
4	8.1	8.0	8.1	7.9	7.7	7.8	---	---	---	7.8	7.7	7.8
5	8.1	7.9	8.0	7.9	7.7	7.8	---	---	---	7.9	7.7	7.8
6	8.0	7.9	8.0	7.9	7.8	7.8	7.9	7.7	7.8	7.9	7.7	7.8
7	8.2	7.9	8.0	7.9	7.8	7.8	7.9	7.7	7.8	7.9	7.7	7.8
8	8.0	7.9	7.9	7.9	7.8	7.8	7.9	7.7	7.8	7.9	7.7	7.8
9	8.1	7.9	8.0	---	---	---	7.8	7.7	7.8	7.8	7.7	7.7
10	8.0	7.5	7.8	---	---	---	7.9	7.8	7.8	7.8	7.7	7.7
11	7.5	7.4	7.5	7.9	7.7	7.8	7.9	7.8	7.8	7.9	7.7	7.8
12	7.5	7.4	7.5	7.9	7.7	7.8	7.9	7.7	7.8	7.9	7.7	7.8
13	7.6	7.4	7.5	7.9	7.8	7.8	7.9	7.7	7.8	7.8	7.7	7.8
14	7.5	7.4	7.4	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.7
15	7.4	7.3	7.4	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.8
16	7.4	7.3	7.3	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.8	7.8
17	7.4	7.3	7.3	7.9	7.8	7.8	7.8	7.7	7.8	7.9	7.8	7.8
18	7.8	7.3	7.6	7.9	7.7	7.8	7.8	7.7	7.8	7.9	7.8	7.8
19	7.8	7.7	7.7	7.9	7.7	7.8	7.9	7.7	7.8	7.9	7.8	7.8
20	7.8	7.7	7.7	8.0	7.8	7.9	7.9	7.7	7.8	7.8	7.7	7.8
21	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.7	7.8	7.8	7.7	7.7
22	7.7	7.7	7.7	7.9	7.8	7.8	7.8	7.7	7.8	7.8	7.7	7.8
23	7.7	7.6	7.7	7.9	7.8	7.8	---	---	---	7.8	7.7	7.7
24	7.7	7.6	7.7	8.0	7.8	7.9	---	---	---	7.8	7.7	7.7
25	7.7	7.6	7.7	7.9	7.8	7.8	---	---	---	7.8	7.6	7.7
26	7.7	7.6	7.6	8.0	7.8	7.9	7.8	7.7	7.8	7.7	7.6	7.6
27	7.7	7.6	7.6	7.9	7.8	7.8	7.8	7.7	7.7	7.7	7.6	7.6
28	7.7	7.6	7.6	7.9	7.8	7.8	7.8	7.7	7.8	7.7	7.6	7.7
29	7.8	7.5	7.7	8.0	7.8	7.9	7.8	7.7	7.8	7.7	7.6	7.6
30	7.9	7.8	7.8	8.0	7.8	7.8	7.8	7.7	7.7	7.7	7.6	7.6
31	---	---	---	7.9	7.8	7.8	7.8	7.7	7.7	---	---	---
MONTH	8.2	7.3	7.7	8.0	7.7	7.8	8.0	7.6	7.8	7.9	7.6	7.7
YEAR	8.6	7.3	7.8									

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.0	18.0	18.5	14.0	13.5	14.0	10.0	9.5	10.0	6.0	5.5	6.0
2	18.5	17.5	18.0	14.0	13.5	14.0	10.0	9.5	10.0	6.0	5.5	5.5
3	18.0	17.0	17.5	14.5	13.5	14.0	10.0	9.5	9.5	6.0	6.0	6.0
4	18.0	16.5	17.0	14.5	13.5	14.0	10.0	9.5	9.5	6.0	5.5	6.0
5	18.0	17.0	17.5	14.5	13.5	14.0	9.5	9.0	9.0	6.0	5.5	5.5
6	18.0	17.0	17.5	14.0	13.0	14.0	9.0	9.0	9.0	5.5	5.0	5.0
7	17.5	16.5	17.0	13.0	13.0	13.0	---	---	---	5.0	5.0	5.0
8	17.5	16.5	16.5	13.0	12.5	13.0	9.5	8.5	9.0	5.0	4.5	5.0
9	17.0	15.5	16.5	13.5	13.0	13.0	8.5	8.0	8.5	4.5	4.0	4.5
10	16.0	15.5	15.5	13.5	13.0	13.0	8.0	7.5	8.0	4.0	3.5	4.0
11	16.0	15.5	15.5	13.0	12.5	13.0	8.0	7.5	8.0	3.5	3.0	3.5
12	15.5	15.5	15.5	13.0	12.5	12.5	8.0	7.5	8.0	3.5	3.0	3.5
13	15.5	15.0	15.5	12.5	12.0	12.5	8.0	7.5	7.5	3.5	3.5	3.5
14	15.5	15.0	15.5	12.5	12.0	12.5	8.0	7.5	8.0	4.0	3.5	4.0
15	15.5	15.0	15.5	12.5	12.0	12.5	9.5	7.5	8.0	3.5	3.5	3.5
16	15.5	15.5	15.5	13.0	12.0	12.5	7.5	7.0	7.5	4.0	3.5	3.5
17	15.5	15.0	15.0	12.5	12.5	12.5	7.5	7.0	7.5	3.5	3.0	3.5
18	15.5	15.0	15.0	12.5	12.0	12.0	7.5	7.0	7.0	3.5	3.5	3.5
19	15.0	14.0	14.5	12.5	12.0	12.0	7.0	6.5	6.5	4.0	3.5	4.0
20	15.0	14.0	14.5	12.5	11.5	12.0	6.5	6.0	6.5	4.0	3.5	4.0
21	15.0	14.0	14.5	11.5	11.5	11.5	6.5	6.0	6.5	4.0	4.0	4.0
22	15.0	14.0	14.5	11.5	11.0	11.0	6.5	6.5	6.5	4.0	3.5	4.0
23	15.0	14.0	14.5	11.0	10.5	11.0	7.0	6.5	6.5	4.0	3.5	4.0
24	14.5	13.5	14.0	11.0	10.5	11.0	7.0	6.5	6.5	---	---	---
25	14.0	13.5	14.0	11.0	10.5	11.0	6.5	6.0	6.5	3.5	3.0	3.5
26	14.0	14.0	14.0	11.0	10.5	10.5	6.5	6.0	6.0	3.5	3.0	3.5
27	14.5	14.0	14.0	11.0	10.5	11.0	6.5	6.0	6.0	3.5	3.0	3.5
28	14.5	14.0	14.0	10.5	10.0	10.5	6.5	6.0	6.0	3.5	3.5	3.5
29	14.5	14.0	14.0	10.0	10.0	10.0	6.0	5.5	6.0	4.0	3.5	3.5
30	14.0	14.0	14.0	11.0	9.5	10.0	6.0	5.5	5.5	4.0	3.5	4.0
31	14.0	13.5	14.0	---	---	---	6.0	5.0	5.5	4.0	4.0	4.0
MONTH	19.0	13.5	15.5	14.5	9.5	12.5	10.0	5.0	7.5	6.0	3.0	4.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	3.5	3.5	4.0	3.5	4.0	7.5	6.5	7.0	9.0	8.5	8.5
2	3.5	3.5	3.5	4.0	3.5	4.0	7.0	6.5	7.0	9.0	8.5	8.5
3	3.5	3.5	3.5	4.0	4.0	4.0	7.5	6.5	7.0	9.0	8.5	9.0
4	3.5	3.0	3.5	4.0	4.0	4.0	8.0	7.5	7.5	12.5	8.5	10.5
5	3.5	3.0	3.0	4.0	4.0	4.0	7.5	7.0	7.0	12.5	11.5	12.0
6	3.5	3.0	3.5	4.0	4.0	4.0	9.0	7.0	8.0	13.0	12.0	12.5
7	3.0	3.0	3.0	4.0	4.0	4.0	8.0	7.5	8.0	---	---	---
8	3.5	3.0	3.5	4.0	3.5	4.0	8.0	7.5	7.5	---	---	---
9	3.5	3.5	3.5	4.0	4.0	4.0	8.5	7.5	8.0	---	---	---
10	3.5	3.5	3.5	7.0	4.0	4.5	9.0	8.0	8.5	---	---	---
11	3.5	3.0	3.5	4.5	4.0	4.5	9.0	8.5	9.0	14.0	12.0	12.5
12	3.5	3.0	3.5	4.5	4.5	4.5	9.5	8.5	9.0	13.0	10.0	12.5
13	3.5	3.0	3.5	5.0	4.5	4.5	9.0	9.0	9.0	14.0	12.5	13.0
14	3.5	3.0	3.5	5.0	4.5	4.5	9.5	8.5	9.0	14.0	12.5	13.5
15	4.0	3.5	3.5	4.5	4.5	4.5	9.0	8.5	9.0	14.0	13.5	14.0
16	4.0	4.0	4.0	4.5	4.5	4.5	9.0	8.5	9.0	14.5	13.5	14.0
17	4.0	3.5	3.5	5.5	4.5	5.0	9.5	9.0	9.0	14.0	11.5	13.5
18	3.5	3.0	3.0	5.5	5.0	5.5	9.5	9.0	9.0	14.5	12.5	13.5
19	3.5	3.0	3.5	5.5	5.0	5.0	9.0	8.5	9.0	15.5	12.5	14.0
20	3.5	3.5	3.5	5.5	5.0	5.0	9.0	9.0	9.0	14.5	13.0	14.0
21	3.5	3.5	3.5	5.5	5.5	5.5	9.5	9.0	9.0	14.5	12.0	13.0
22	3.5	3.5	3.5	6.0	5.5	6.0	---	---	---	12.5	12.0	12.0
23	3.5	3.5	3.5	6.0	6.0	6.0	---	---	---	12.5	12.0	12.0
24	4.0	3.5	4.0	5.5	5.5	5.5	---	---	---	14.0	11.5	12.5
25	3.5	3.5	3.5	5.5	5.5	5.5	---	---	---	14.5	12.5	13.5
26	---	---	---	6.5	5.5	6.0	---	---	---	14.5	13.5	14.0
27	4.0	3.5	3.5	6.5	6.0	6.5	---	---	---	15.0	14.0	14.5
28	4.0	3.5	4.0	6.5	6.0	6.0	8.5	8.0	8.0	15.0	14.0	14.5
29	---	---	---	6.5	6.0	6.5	8.5	8.0	8.0	15.5	14.0	14.5
30	---	---	---	6.5	6.0	6.5	8.5	8.0	8.5	15.0	12.5	14.0
31	---	---	---	7.0	6.0	6.5	---	---	---	13.5	12.5	13.0
MONTH	4.0	3.0	3.5	7.0	3.5	5.0	9.5	6.5	8.5	15.5	8.5	12.5

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.5	13.0	13.0	19.5	18.5	19.0	22.0	21.0	21.5	21.5	21.0	21.0
2	15.5	13.5	14.5	20.0	19.0	19.5	22.0	21.0	21.5	21.5	21.0	21.0
3	16.0	15.0	15.5	19.5	19.0	19.0	22.0	21.0	21.5	22.0	21.0	21.5
4	16.0	15.5	15.5	19.5	18.5	19.0	---	---	---	21.5	21.0	21.0
5	16.0	15.0	15.5	19.5	19.0	19.0	---	---	---	21.5	21.0	21.0
6	16.0	15.0	15.5	19.5	18.0	19.0	22.5	21.5	22.0	21.5	21.0	21.0
7	15.5	14.5	15.0	20.0	18.5	19.5	22.0	21.5	21.5	21.0	20.5	21.0
8	15.0	14.5	15.0	20.0	19.0	19.5	22.0	21.0	21.5	21.0	20.5	20.5
9	16.0	14.5	15.0	---	---	---	21.5	21.0	21.5	21.0	20.0	20.5
10	15.5	8.0	12.0	---	---	---	22.0	21.0	21.5	21.0	20.5	20.5
11	8.5	8.0	8.5	20.0	19.0	19.5	22.0	20.0	21.5	21.0	20.0	20.5
12	8.5	8.5	8.5	20.0	19.0	19.5	22.0	21.5	21.5	21.0	20.0	20.5
13	9.0	8.5	8.5	20.0	19.5	20.0	22.0	21.0	21.5	21.0	20.5	20.5
14	10.0	9.0	9.5	20.0	19.5	20.0	22.0	21.0	21.5	21.0	20.5	20.5
15	10.5	10.0	10.0	20.5	19.5	20.0	22.0	21.5	21.5	21.0	20.5	21.0
16	11.0	10.0	10.5	20.5	19.5	20.0	22.0	19.0	21.5	21.5	20.5	21.0
17	10.5	9.5	10.0	21.0	20.0	20.5	22.0	21.5	21.5	21.0	20.5	21.0
18	16.0	9.5	13.5	21.0	20.0	20.5	22.0	21.5	22.0	21.0	20.5	20.5
19	16.0	15.0	15.5	21.5	20.0	20.5	22.0	21.5	21.5	20.5	20.0	20.5
20	16.0	15.0	15.5	21.0	20.5	20.5	22.5	21.5	22.0	20.5	20.0	20.0
21	16.0	15.0	15.5	21.0	20.5	20.5	22.5	21.5	22.0	20.0	19.5	20.0
22	15.5	15.0	15.0	21.0	20.0	20.5	22.0	21.0	21.5	19.5	19.5	19.5
23	15.5	14.5	15.0	21.5	20.5	21.0	22.0	21.0	21.5	19.5	19.0	19.0
24	15.5	15.0	15.0	21.5	20.5	21.0	---	---	---	19.0	18.5	19.0
25	15.5	15.0	15.0	21.5	20.5	21.0	---	---	---	19.0	18.5	19.0
26	15.5	15.0	15.5	21.5	21.0	21.0	22.0	21.5	21.5	18.5	18.5	18.5
27	15.5	15.0	15.5	22.0	20.5	21.0	21.5	21.5	21.5	18.5	18.0	18.5
28	16.0	15.0	15.5	22.0	21.0	21.5	22.0	21.5	21.5	18.5	18.0	18.5
29	19.5	15.0	17.5	22.0	21.0	21.5	21.5	21.0	21.5	18.5	18.0	18.5
30	19.5	18.5	19.0	21.5	21.0	21.5	21.5	21.0	21.0	18.5	18.0	18.5
31	---	---	---	21.5	21.0	21.5	21.0	21.0	21.0	---	---	---
MONTH	19.5	8.0	14.0	22.0	18.0	20.0	22.5	19.0	21.5	22.0	18.0	20.0
YEAR	22.5	3.0	12.0									

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.3	8.4	8.8	9.9	9.4	9.6	10.2	9.9	10.1	11.8	11.2	11.4
2	9.2	8.5	8.8	9.9	9.4	9.6	10.4	9.9	10.1	11.8	11.3	11.5
3	9.5	8.7	8.9	9.9	9.5	9.6	10.5	10.0	10.2	11.8	11.3	11.5
4	9.5	8.6	9.0	10.1	9.6	9.7	10.5	10.1	10.2	11.6	11.2	11.3
5	9.4	8.4	8.9	10.0	9.5	9.7	10.7	10.2	10.4	11.7	11.2	11.5
6	9.1	8.4	8.7	9.8	9.2	9.5	10.7	10.3	10.4	12.4	11.4	12.0
7	9.2	8.4	8.7	9.7	9.2	9.4	10.7	10.1	10.4	12.5	12.4	12.4
8	9.3	8.4	8.7	9.7	9.3	9.4	10.7	10.2	10.4	12.6	12.3	12.4
9	9.1	8.4	8.7	9.9	9.3	9.5	10.8	10.3	10.5	12.3	12.2	12.2
10	---	---	---	9.8	9.3	9.5	10.9	10.4	10.6	12.5	12.2	12.4
11	---	---	---	9.8	9.4	9.5	10.9	10.5	10.7	12.6	12.3	12.4
12	---	---	---	9.8	9.5	9.6	11.0	10.5	10.7	12.5	12.3	12.4
13	---	---	---	9.8	9.5	9.6	11.0	10.7	10.8	12.4	12.2	12.3
14	---	---	---	9.8	9.4	9.6	10.9	10.5	10.7	12.2	12.1	12.1
15	9.1	8.2	8.9	9.7	9.4	9.5	10.8	9.7	10.6	12.4	12.2	12.3
16	9.0	8.0	8.7	9.8	9.4	9.5	11.2	10.6	10.9	12.3	12.2	12.2
17	9.1	9.0	9.1	9.8	9.4	9.5	11.2	10.7	10.9	12.5	12.3	12.4
18	9.0	8.9	9.0	9.8	9.4	9.6	11.3	10.8	11.0	12.5	12.3	12.4
19	9.0	8.7	8.9	9.8	9.3	9.6	11.4	10.8	11.1	12.5	12.3	12.4
20	9.0	8.7	8.9	9.8	9.3	9.5	11.4	10.9	11.2	12.6	12.3	12.4
21	9.1	8.8	8.9	10.0	9.6	9.7	11.5	10.9	11.2	12.5	12.3	12.4
22	9.2	8.8	9.0	10.1	9.7	9.8	11.4	10.9	11.1	12.6	12.4	12.5
23	9.1	8.8	8.9	10.0	9.8	9.9	11.5	10.9	11.1	12.5	12.3	12.4
24	9.3	9.0	9.2	10.1	9.7	9.9	11.7	11.1	11.3	12.8	12.5	12.7
25	9.3	9.1	9.2	10.2	9.8	10.0	11.7	11.1	11.3	12.8	12.6	12.7
26	9.4	9.0	9.2	10.3	9.9	10.1	11.6	11.1	11.3	12.9	12.6	12.8
27	9.5	9.1	9.2	10.2	9.8	10.0	11.6	11.1	11.3	12.9	12.5	12.7
28	9.6	9.2	9.3	10.3	9.9	10.1	11.7	11.2	11.3	12.7	12.5	12.5
29	9.7	9.3	9.4	10.4	10.1	10.2	11.8	11.2	11.4	12.7	12.5	12.6
30	9.8	9.4	9.5	10.5	9.8	10.2	11.8	11.3	11.5	12.6	12.4	12.5
31	9.8	9.5	9.6	---	---	---	11.7	11.2	11.4	12.5	12.2	12.3
MONTH	9.8	8.0	9.0	10.5	9.2	9.7	11.8	9.7	10.8	12.9	11.2	12.3
		FEBRUARY			MARCH			APRIL			MAY	
1	14.4	12.3	13.4	14.4	14.0	14.2				---	---	---
2	14.6	14.2	14.4	14.3	13.9	14.1				---	---	---
3	15.0	14.1	14.3	14.3	14.0	14.1				---	---	---
4	---	---	---	14.4	14.0	14.2				---	---	---
5	---	---	---	14.5	14.1	14.2				---	---	---
6	---	---	---	14.4	14.1	14.2				---	---	---
7	---	---	---	14.5	14.1	14.3				---	---	---
8	---	---	---	---	---	---				---	---	---
9	---	---	---	---	---	---				---	---	---
10	---	---	---	---	---	---				---	---	---
11	---	---	---	11.8	10.9	11.2				14.9	13.2	14.0
12	---	---	---	11.4	10.9	11.1				14.8	12.8	13.8
13	---	---	---	12.3	10.8	11.2				14.7	12.8	13.5
14	---	---	---	13.1	10.8	11.4				13.9	12.8	13.4
15	---	---	---	14.2	11.2	12.3				13.9	12.7	13.4
16	---	---	---	14.5	12.0	12.7				13.7	12.6	13.2
17	---	---	---	---	---	---				14.4	12.7	13.4
18	---	---	---	---	---	---				13.8	12.8	13.2
19	---	---	---	---	---	---				13.5	12.7	13.2
20	---	---	---	---	---	---				13.8	12.9	13.2
21	14.8	14.2	14.4	---	---	---				14.1	13.0	13.5
22	15.6	14.3	14.9	---	---	---				14.1	13.7	13.9
23	15.7	14.2	14.6	---	---	---				13.9	13.6	13.7
24	14.8	14.1	14.4	---	---	---				14.1	13.1	13.5
25	14.5	13.9	14.2	---	---	---				13.5	12.8	13.1
26	14.5	14.0	14.2	---	---	---				12.8	12.6	12.7
27	14.1	14.0	14.1	---	---	---				12.6	12.3	12.4
28	14.3	14.0	14.1	---	---	---				12.7	11.7	12.4
29	---	---	---	---	---	---				12.5	12.1	12.3
30	---	---	---	---	---	---				13.5	11.9	12.6
31	---	---	---	---	---	---				13.4	13.0	13.2
MONTH	15.7	12.3	14.3	14.5	10.8	13.0				14.9	11.7	13.2

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.4	12.9	13.2	---	---	---	---	---	---	8.2	8.0	8.1
2	13.0	11.4	12.1	---	---	---	---	---	---	8.1	7.8	8.0
3	11.9	11.4	11.6	---	---	---	---	---	---	8.0	7.7	7.8
4	11.7	11.2	11.4	---	---	---	---	---	---	8.1	7.8	7.9
5	11.7	11.1	11.4	---	---	---	---	---	---	8.0	7.8	7.9
6	11.3	10.6	11.0	---	---	---	8.2	7.7	7.9	8.0	7.6	7.8
7	11.0	10.0	10.6	---	---	---	8.1	7.7	7.9	8.1	7.7	7.8
8	10.8	8.9	9.7	---	---	---	8.1	7.8	7.9	9.1	7.6	8.3
9	9.5	8.4	8.8	---	---	---	8.1	7.8	7.9	8.9	8.6	8.7
10	14.0	8.3	10.7	---	---	---	8.0	7.8	7.9	8.8	8.6	8.7
11	---	---	---	---	---	---	8.0	7.6	7.8	8.8	8.6	8.7
12	---	---	---	---	---	---	8.0	7.6	7.8	8.9	8.7	8.8
13	---	---	---	---	---	---	8.0	7.6	7.8	8.9	8.6	8.8
14	---	---	---	---	---	---	7.9	7.7	7.8	8.9	8.5	8.7
15	---	---	---	---	---	---	7.9	7.7	7.8	8.8	8.5	8.6
16	---	---	---	---	---	---	8.4	7.6	7.8	8.8	8.4	8.6
17	---	---	---	---	---	---	7.8	7.6	7.7	8.8	8.5	8.6
18	---	---	---	---	---	---	7.9	7.6	7.7	8.9	8.6	8.7
19	---	---	---	---	---	---	7.8	7.6	7.7	9.0	8.6	8.7
20	---	---	---	---	---	---	7.7	7.5	7.6	8.9	8.6	8.7
21	---	---	---	7.8	7.0	7.4	7.6	7.3	7.5	8.9	8.6	8.7
22	---	---	---	7.8	7.0	7.4	7.7	7.4	7.6	8.9	8.7	8.8
23	---	---	---	8.0	6.9	7.2	---	---	---	9.1	8.7	8.9
24	---	---	---	7.8	6.8	7.3	---	---	---	9.1	8.7	8.9
25	---	---	---	---	---	---	---	---	---	9.0	8.7	8.8
26	---	---	---	---	---	---	8.4	8.0	8.2	8.9	8.7	8.8
27	---	---	---	---	---	---	8.2	8.0	8.1	9.1	8.7	8.9
28	---	---	---	---	---	---	8.3	8.0	8.2	9.2	8.8	9.0
29	---	---	---	---	---	---	8.4	8.1	8.2	9.2	8.9	9.0
30	---	---	---	---	---	---	8.4	8.2	8.3	9.2	8.9	9.0
31	---	---	---	---	---	---	8.3	8.0	8.2	---	---	---
MONTH	14.0	8.3	11.1	8.0	6.8	7.3	8.4	7.3	7.9	9.2	7.6	8.6
YEAR	15.7	6.8	10.5									

02012500 JACKSON RIVER AT FALLING SPRING, VA

LOCATION.--Lat 37°52'36", long 79°58'39", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) upstream from Smith Bridge, 0.8 mi (1.3 km) south of town of Falling Spring, 1.6 mi (2.6 km) downstream from Falling Spring Creek, and 5.5 mi (8.8 km) north of Covington.

DRAINAGE AREA.--411 mi^2 (1,064 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year. Prior to October 1934, published as "at Barber."

REVISED RECORDS.--WSP 952: 1927, 1928(M), 1929-30, 1932-40. WSP 1303: 1926(M), 1930-34(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,333.49 ft (406.448 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795), 7.6 mi (12.2 km) upstream.

AVERAGE DISCHARGE.--57 years, 489 ft^3/s (13.85 m^3/s), 16.16 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft^3/s (700 m^3/s) Mar. 17, 1936, gage height, 14.74 ft (4.493 m), from rating curve extended above 17,000 ft^3/s (480 m^3/s) on basis of records for other stations in James River basin; minimum, 36 ft^3/s (1.02 m^3/s) Oct. 12, 1946, July 15, 1981; minimum daily, 52 ft^3/s (1.47 m^3/s) Sept. 8, 1966; minimum gage height, 2.65 ft (0.808 m) Oct. 12, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of about 20 ft (6.1 m), discharge, about 50,000 ft^3/s (1,400 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,720 ft^3/s (190 m^3/s) June 14, gage height, 9.75 ft (2.972 m); minimum, 41 ft^3/s (1.16 m^3/s) Nov. 30, gage height, 2.88 ft (0.878 m); minimum daily, 63 ft^3/s (1.78 m^3/s) Oct. 5, 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	89	88	99	1220	580	423	592	986	297	307	214
2	66	87	99	101	2200	589	495	579	645	285	297	218
3	65	85	94	128	2850	596	495	566	338	286	293	218
4	65	84	92	524	3210	589	489	417	342	290	290	218
5	63	85	90	286	3340	587	619	410	363	293	289	218
6	65	84	89	544	1880	585	634	329	363	291	282	217
7	63	83	88	940	1840	833	788	283	600	251	279	217
8	63	83	88	799	1110	1310	786	275	720	302	288	191
9	65	83	87	649	581	1850	681	270	440	307	290	218
10	280	83	85	633	899	1080	508	266	860	345	281	217
11	284	82	84	497	1520	780	288	241	1520	305	243	216
12	284	81	84	351	1570	771	286	259	1230	299	281	216
13	283	81	83	332	1170	762	314	258	2400	294	280	216
14	283	81	91	328	928	855	345	256	4780	295	278	216
15	282	81	118	301	514	1190	394	255	5060	293	277	216
16	282	81	119	277	504	1480	416	254	4380	291	277	215
17	284	79	105	278	1530	1670	351	253	2080	293	277	215
18	285	79	99	272	2930	1750	370	252	850	292	281	216
19	281	80	94	272	2810	1620	477	253	511	290	280	216
20	79	85	90	271	1600	2440	597	254	492	291	278	218
21	70	82	87	332	1000	4240	508	253	404	289	277	220
22	69	81	99	355	1270	4030	365	256	325	287	277	230
23	70	81	174	376	1030	3450	290	258	317	287	277	221
24	70	85	183	552	858	2230	243	259	311	289	277	219
25	70	82	146	525	761	1250	243	266	307	287	277	219
26	79	81	128	512	579	1100	426	257	302	286	275	232
27	268	82	118	395	579	779	903	256	300	285	276	262
28	137	84	112	290	575	759	1100	330	297	288	276	230
29	106	83	106	285	---	672	1060	406	297	288	275	224
30	96	75	100	285	---	593	889	656	300	319	274	213
31	93	---	100	315	---	490	---	1010	---	325	257	---
TOTAL	4615	2472	3220	12104	40858	41510	15783	10729	32120	9120	8666	6576
MEAN	149	82.4	104	390	1459	1339	526	346	1071	294	280	219
MAX	285	89	183	940	3340	4240	1100	1010	5060	345	307	262
MIN	63	75	83	99	504	490	243	241	297	251	243	191
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122
MEAN‡	271	126	393	629	1404	1339	529	351	1024	225	154	97
CFSM‡	.66	.31	.96	1.53	3.42	3.26	1.29	.85	2.49	.55	.37	.24
IN‡	.76	.34	1.10	1.76	3.56	3.76	1.44	.98	2.78	.63	.43	.26

CAL YR 1981 TOTAL 87757 MEAN 240 MAX 3010 MIN 61 MEAN‡ 334 CFSM‡ .81 IN‡ 11.03
WTR YR 1982 TOTAL 187773 MEAN 514 MAX 5060 MIN 63 MEAN‡ 539 CFSM‡ 1.31 IN‡ 17.81

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1968 to current year.
WATER TEMPERATURES: December 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 500 micromhos Oct. 2, 1970; minimum daily, 61 micromhos Dec. 21, 26, 1977.
WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 2, 5, 1975; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 320 micromhos Dec. 23; minimum daily, 115 micromhos June 16.
WATER TEMPERATURES: Maximum daily, 25.0°C Aug. 5; minimum daily, 2.0°C Dec. 21, Jan. 12, 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT 14...	1445	284	178	8.1	15.0	17	74	24	3.5	1.9	1.4
DEC 01...	1330	90	258	8.4	6.0	4	120	38	5.9	2.4	2.2
JAN 28...	1200	287	176	8.2	2.0	1	78	25	3.7	1.9	1.5
MAR 09...	1400	1850	122	8.0	6.0	3	56	18	2.7	1.9	1.0
APR 28...	1230	1120	120	8.0	10.5	<1	52	17	2.3	1.6	1.1
JUN 07...	1130	523	151	8.2	16.0	<1	65	21	3.1	1.4	1.2
JUL 21...	1000	287	163	8.1	20.5	1	71	23	3.3	1.7	1.3
SEP 09...	1030	219	178	8.1	19.5	16	81	26	3.8	1.9	1.2

< Actual value is known to be less than the value shown.

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 14...	66	14	2.2	<.1	4.5	108	91	<.010	.04	<.010	190
DEC 01...	84	40	2.7	.2	4.3	156	146	<.010	.14	<.010	4
JAN 28...	64	19	2.4	.1	3.7	111	96	.020	.19	<.010	5
MAR 09...	44	11	2.4	<.1	4.3	80	68	<.010	.31	<.010	6
APR 28...	43	13	2.2	<.1	4.3	75	67	.010	.27	.010	14
JUN 07...	53	20	2.3	<.1	2.7	80	84	<.010	.18	<.010	6
JUL 21...	59	18	2.3	.1	2.8	108	88	<.010	<.10	.010	8
SEP 09...	63	18	2.2	.1	3.6	84	95	<.010	<.10	.280	<3

< Actual value is known to be less than the value shown.

02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	256	280	270	157	153	166	155	123	158	169	172
2	263	256	277	300	156	166	154	154	140	160	156	171
3	265	257	267	300	139	---	151	151	150	162	166	182
4	260	253	263	205	156	---	156	188	156	160	154	171
5	260	248	271	260	144	---	139	157	153	158	169	177
6	260	255	267	245	157	---	182	162	156	151	172	169
7	264	257	270	195	157	---	138	163	126	154	174	169
8	262	258	280	230	178	146	136	171	130	152	176	170
9	265	260	250	240	175	137	148	175	177	156	180	167
10	193	258	270	238	160	148	153	172	150	158	176	171
11	185	267	265	250	155	144	178	167	117	163	177	171
12	183	267	290	260	151	154	171	165	139	156	170	171
13	185	265	250	---	169	144	175	158	130	163	156	171
14	183	268	295	---	173	137	157	163	120	163	171	171
15	182	260	300	263	177	134	154	168	117	156	154	171
16	188	257	270	260	168	133	146	168	115	168	156	169
17	200	257	260	245	157	129	146	163	136	161	156	171
18	199	260	280	193	144	129	151	189	162	166	152	172
19	196	257	295	---	143	128	148	165	160	154	154	172
20	235	257	295	193	145	134	144	163	158	156	154	172
21	260	272	270	188	138	133	137	158	163	153	156	172
22	260	270	280	189	139	124	156	155	173	154	156	182
23	260	267	320	178	144	---	162	161	170	156	156	173
24	270	262	280	178	154	127	173	158	166	159	155	180
25	263	270	295	175	139	139	176	157	164	153	155	185
26	259	265	285	174	148	138	161	155	162	164	155	197
27	240	274	280	180	---	168	140	154	161	152	151	195
28	287	272	283	188	155	157	148	143	159	163	151	190
29	277	273	245	189	---	161	143	148	159	154	156	183
30	272	275	260	144	---	158	138	139	161	182	156	180
31	260	---	250	---	---	161	---	123	---	172	159	---
MEAN	239	262	276	221	155	143	154	160	148	159	161	176

WTR YR 1982 MEAN 189 MAX 320 MIN 115

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	14.0	8.0	5.0	4.5	6.5	11.0	12.0	14.5	22.0	24.0	22.0
2	16.5	14.5	8.5	5.0	4.0	7.0	11.0	12.0	17.5	21.5	23.0	23.5
3	16.0	15.0	8.0	5.5	4.5	---	10.5	13.0	19.0	21.0	24.5	23.0
4	16.0	14.5	8.0	7.0	5.0	---	10.0	14.0	16.5	21.5	24.0	21.0
5	17.0	14.5	7.5	5.5	4.0	---	9.0	16.5	18.0	20.5	25.0	23.0
6	18.5	14.0	7.0	5.5	4.5	---	9.0	17.0	16.0	23.0	23.5	23.0
7	17.0	12.5	7.0	6.0	4.5	---	9.0	15.5	17.0	23.5	23.5	22.5
8	17.0	11.5	8.0	5.5	6.0	6.0	8.0	14.5	18.0	23.0	23.5	22.0
9	17.0	10.5	5.5	5.0	5.0	6.0	9.0	14.0	20.0	23.0	22.0	22.0
10	17.0	12.0	4.0	3.0	5.0	8.0	10.5	16.5	17.0	22.5	24.5	22.0
11	16.5	11.0	4.0	2.5	5.0	8.0	10.0	17.0	11.0	21.0	23.5	22.5
12	17.0	10.5	5.5	2.0	4.5	7.0	11.0	17.0	17.0	23.0	23.0	22.0
13	17.0	10.0	5.0	---	5.5	7.0	11.0	17.0	17.5	21.5	23.0	21.5
14	16.5	10.0	5.0	---	5.5	6.5	12.5	18.0	11.0	22.5	21.5	22.0
15	17.0	10.5	5.5	4.5	6.0	5.0	10.5	18.0	11.0	23.0	24.5	23.0
16	17.0	10.5	6.0	4.0	6.0	6.0	11.0	18.0	12.0	24.5	---	23.0
17	16.0	11.0	5.0	2.0	5.0	8.0	11.5	17.5	12.0	23.5	24.0	22.0
18	16.0	11.5	5.0	3.5	4.0	8.0	13.0	18.5	16.0	22.5	24.0	21.0
19	13.0	10.5	3.0	---	4.5	7.5	11.0	17.0	18.0	24.0	24.5	20.0
20	13.0	10.5	2.5	4.5	5.5	7.0	10.5	17.5	19.0	23.0	24.5	20.0
21	13.5	8.0	2.0	5.0	5.0	7.0	12.0	17.0	18.0	24.5	24.0	19.0
22	14.0	7.5	4.5	4.0	4.5	7.0	11.5	17.0	16.0	24.0	23.0	18.5
23	14.0	7.5	8.0	4.0	7.0	---	12.0	16.5	18.5	23.0	23.0	19.5
24	12.0	6.5	7.0	4.0	7.0	7.0	14.0	16.0	18.0	24.5	24.0	19.0
25	11.0	8.0	7.0	4.0	6.0	9.0	13.0	17.5	19.0	24.0	24.0	17.5
26	12.0	8.0	5.5	3.5	5.0	7.0	11.5	18.0	18.5	24.0	23.5	18.0
27	14.5	9.0	7.0	4.0	---	7.0	10.0	17.0	18.0	24.5	21.0	18.5
28	14.0	8.0	6.0	4.0	5.5	7.5	11.5	17.5	20.0	23.5	22.5	18.5
29	14.0	7.0	6.0	4.0	---	9.5	10.5	17.5	20.0	24.0	22.0	18.5
30	14.0	6.0	4.0	6.0	---	9.5	11.0	18.0	21.0	22.5	21.5	19.0
31	14.0	---	3.0	---	---	9.0	---	16.5	---	22.5	21.0	---
MEAN	15.5	10.5	5.5	4.5	5.0	7.5	11.0	16.5	17.0	23.0	23.5	21.0

WTR YR 1982 MEAN 13.5 MAX 25.0 MIN 2.0

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA

LOCATION.--Lat 37°48'39", long 79°59'19", Covington City, Hydrologic Unit 02080201, on left bank 250 ft (76 m) upstream from Dry Run and 1.7 mi (2.7 km) upstream from Dunlap Creek and bridge on U.S. Highway 60.

DRAINAGE AREA.--439 mi² (1,137 km²).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 30.5°C July 21, 1980; minimum recorded, 0.0°C Jan. 13, 1982.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 24.5°C July 19, 25-27, Aug. 5, 10, 16; minimum recorded, 0.0°C Jan. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.0	15.5	17.5	14.5	12.0	13.0	4.5	3.0	4.0	3.5	.5	2.0
2	19.5	14.0	16.5	15.0	11.5	13.5	7.0	4.0	5.5	4.0	1.0	2.5
3	16.5	12.5	14.5	16.0	12.0	14.0	7.5	5.5	6.5	4.0	2.5	3.0
4	16.5	12.0	13.5	16.0	12.5	14.0	7.0	6.0	6.5	6.0	3.5	5.0
5	16.5	13.0	14.5	15.5	12.0	13.5	6.5	5.5	6.0	5.5	4.5	5.5
6	17.5	15.0	16.0	14.0	11.5	13.0	6.5	4.0	5.0	5.5	4.0	4.5
7	19.0	14.5	16.5	12.0	9.5	10.5	6.0	3.5	5.0	6.5	5.5	6.0
8	18.5	13.5	15.5	11.5	7.5	9.0	7.0	5.5	6.0	5.5	4.0	5.0
9	16.5	12.5	14.5	10.0	7.5	8.5	5.5	3.5	4.5	4.0	2.5	3.5
10	15.0	12.0	13.5	11.0	7.5	9.0	3.0	.5	2.0	---	---	---
11	16.5	13.5	15.0	11.0	7.5	9.0	---	---	---	---	---	---
12	16.5	15.0	15.5	10.0	7.0	8.0	3.5	1.0	2.0	---	---	---
13	16.5	14.0	15.5	9.5	6.0	7.5	3.5	.5	2.0	1.0	.0	.5
14	16.5	13.0	14.5	9.0	5.5	7.0	2.5	1.0	2.0	2.0	.5	1.0
15	15.5	13.0	14.5	9.5	5.5	7.5	3.5	2.5	3.0	1.5	.5	1.0
16	17.0	15.5	16.0	9.0	6.0	8.0	4.0	2.5	3.5	2.0	.5	1.5
17	15.5	13.5	14.5	10.5	8.0	9.0	3.5	2.5	3.0	---	---	---
18	15.5	14.5	15.0	11.5	9.0	10.0	4.0	2.0	3.0	---	---	---
19	14.5	12.0	13.5	11.0	8.0	9.5	2.5	.5	1.5	2.5	1.0	2.0
20	13.5	10.0	11.5	11.0	9.0	10.5	---	---	---	5.0	2.5	3.5
21	13.5	9.0	11.5	8.5	6.5	7.5	---	---	---	5.0	4.0	4.5
22	13.5	10.5	12.5	7.5	5.0	6.0	---	---	---	4.0	2.5	3.0
23	13.5	12.0	13.0	6.0	2.5	4.5	5.5	.5	4.0	4.0	2.0	3.0
24	12.5	10.0	11.5	5.0	3.5	4.0	6.5	5.5	6.0	3.5	2.0	3.0
25	10.5	9.5	10.0	7.0	4.0	5.5	6.0	4.0	5.5	2.5	.5	1.5
26	10.5	9.0	10.0	7.0	4.0	5.5	5.0	3.5	4.0	3.0	1.5	2.5
27	14.0	11.0	12.5	7.5	5.5	6.5	5.5	4.0	4.5	---	---	---
28	15.0	13.0	14.0	8.0	5.5	6.5	5.5	3.5	4.5	3.0	.5	2.0
29	14.5	12.0	13.0	7.0	4.0	5.5	5.5	3.5	4.5	3.5	2.0	3.0
30	13.0	12.0	12.5	5.0	3.0	4.0	4.0	1.5	2.5	4.5	2.5	4.0
31	14.0	11.5	12.5	---	---	---	---	---	---	6.0	4.5	5.0
MONTH	20.0	9.0	14.0	16.0	2.5	8.5	7.5	.5	4.0	6.5	.0	3.0

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.0	3.5	5.0	4.5	1.0	3.0	---	---	---	12.0	8.0	10.5
2	4.5	3.0	3.5	5.0	1.5	3.5	---	---	---	11.5	9.0	10.5
3	4.0	2.5	3.5	4.5	2.5	3.0	---	---	---	13.0	9.0	11.0
4	5.0	3.0	4.0	3.5	2.0	2.5	---	---	---	13.5	9.0	11.5
5	4.0	3.0	3.5	5.0	1.5	3.5	---	---	---	---	---	---
6	4.5	2.5	3.5	5.0	2.0	3.0	---	---	---	16.5	13.0	15.0
7	4.0	2.0	2.5	3.0	1.5	2.0	---	---	---	16.5	14.5	15.5
8	4.5	1.5	3.0	4.5	1.0	2.5	---	---	---	16.5	14.5	15.5
9	4.5	3.0	4.0	---	---	---	---	---	---	17.0	12.5	14.5
10	4.0	2.0	3.5	---	---	---	---	---	---	18.5	13.0	16.0
11	4.5	2.5	3.0	---	---	---	---	---	---	19.0	14.0	16.5
12	3.5	1.5	2.5	---	---	---	---	---	---	20.0	16.0	17.0
13	4.0	2.0	3.0	---	---	---	---	---	---	19.0	15.0	16.5
14	4.5	1.0	3.0	---	---	---	---	---	---	19.5	15.5	17.5
15	4.5	1.5	3.0	---	---	---	---	---	---	19.5	16.0	17.5
16	4.5	4.0	4.5	---	---	---	---	---	---	19.5	16.0	17.5
17	4.5	2.5	4.0	---	---	---	---	---	---	20.5	16.0	18.0
18	3.0	2.5	2.5	---	---	---	---	---	---	19.5	16.5	18.0
19	3.5	2.5	2.5	---	---	---	---	---	---	20.5	17.0	18.0
20	4.5	2.5	3.5	---	---	---	---	---	---	20.5	16.0	17.0
21	4.0	3.0	4.0	---	---	---	---	---	---	19.5	16.0	17.0
22	4.0	2.0	3.0	---	---	---	---	---	---	20.5	16.0	17.5
23	5.0	1.5	3.5	---	---	---	---	---	---	18.5	16.0	17.0
24	6.0	2.0	4.0	---	---	---	---	---	---	18.0	15.5	17.0
25	5.0	2.5	3.5	---	---	---	---	---	---	17.5	16.0	16.5
26	3.0	1.0	2.0	---	---	---	---	---	---	19.0	16.0	17.5
27	2.0	.5	1.0	---	---	---	---	---	---	18.5	17.0	17.5
28	4.5	1.0	3.0	---	---	---	---	---	---	18.5	16.5	17.5
29	---	---	---	---	---	---	11.5	7.5	9.5	18.0	16.0	17.0
30	---	---	---	---	---	---	12.5	7.5	9.5	18.0	15.5	17.0
31	---	---	---	---	---	---	---	---	---	17.0	13.0	15.0
MONTH	6.0	.5	3.5	5.0	1.0	3.0	12.5	7.5	9.5	20.5	8.0	16.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	13.0	13.5	21.5	17.5	19.5	23.5	21.0	22.0	21.5	20.0	20.5
2	17.5	12.5	14.5	21.5	18.5	20.0	22.5	21.0	21.5	24.0	21.0	22.0
3	18.0	16.5	17.0	21.0	19.5	20.0	24.0	21.0	22.5	24.0	21.0	22.0
4	18.0	16.0	16.5	20.5	19.0	20.0	24.0	22.0	23.0	22.5	19.0	20.5
5	17.0	15.5	16.0	21.5	20.0	20.5	24.5	22.5	23.5	22.0	18.5	20.0
6	16.0	15.0	15.5	22.5	19.5	21.0	24.0	22.5	23.0	22.5	18.5	20.0
7	18.0	15.0	16.5	23.5	20.5	22.0	24.0	22.0	23.0	22.5	19.0	20.5
8	17.5	14.5	16.0	23.5	21.5	22.0	23.0	21.5	22.5	22.0	20.0	20.5
9	19.5	15.0	17.0	22.0	21.0	21.5	22.0	21.0	21.5	22.0	20.0	20.5
10	20.0	10.5	17.0	23.0	20.0	21.5	24.5	21.0	22.5	21.5	19.0	20.0
11	12.0	9.0	10.5	22.5	21.5	22.0	23.5	21.5	22.5	22.0	19.0	20.0
12	10.5	9.0	9.5	23.0	20.5	21.5	23.0	21.0	22.0	22.5	18.5	20.5
13	12.5	10.0	11.5	22.0	20.0	21.0	22.0	20.5	21.5	21.0	19.5	20.5
14	11.0	9.0	10.0	22.0	20.0	21.0	23.5	20.5	21.5	21.5	20.0	21.0
15	11.0	9.0	10.0	23.5	21.0	22.0	24.0	21.0	22.0	23.5	20.5	21.5
16	12.0	10.0	11.0	24.0	21.5	22.5	24.5	21.5	23.0	23.0	20.5	21.5
17	12.5	10.0	11.0	24.0	22.0	23.0	24.0	21.5	22.5	22.0	19.0	20.5
18	15.0	9.5	12.0	23.5	22.0	22.5	24.0	21.0	22.5	20.5	18.0	19.5
19	17.5	14.5	16.5	24.5	22.0	23.0	24.0	21.0	22.0	19.0	18.0	18.5
20	18.5	15.5	17.0	24.0	22.0	22.5	24.0	21.5	22.5	18.5	17.5	13.0
21	17.5	14.5	16.5	24.0	21.0	22.5	24.0	21.5	23.0	17.5	17.0	17.0
22	17.5	16.0	16.5	24.0	22.0	23.0	22.0	20.0	21.0	17.5	16.0	16.5
23	18.5	16.0	17.0	24.0	22.5	23.0	22.0	20.5	21.0	17.0	15.0	16.0
24	18.0	16.0	17.0	23.5	21.5	22.5	24.0	21.0	22.0	17.0	15.0	16.0
25	19.0	16.0	17.5	24.5	21.5	23.0	24.0	22.0	22.5	17.5	16.0	16.5
26	19.0	17.5	18.0	24.5	22.0	23.0	23.0	20.5	21.5	17.0	15.5	16.5
27	18.5	17.0	18.0	24.5	22.5	23.5	21.0	19.0	20.0	17.0	15.5	16.0
28	20.0	17.5	18.5	24.0	22.0	23.0	22.5	19.5	20.5	17.0	15.5	16.5
29	19.5	18.0	19.0	24.0	21.0	22.5	21.5	18.5	20.0	17.5	16.0	16.5
30	20.5	17.5	19.0	23.0	21.5	22.0	20.0	18.5	19.5	17.5	16.0	16.5
31	---	---	---	22.0	21.0	21.5	20.5	19.5	20.0	---	---	---
MONTH	20.5	9.0	15.0	24.5	17.5	22.0	24.5	18.5	22.0	24.0	15.0	19.0
YEAR	24.5	.0	13.0									

02013000 DUNLAP CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°48'10", long 80°02'50", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) downstream from bridge on U.S. Highway 60, 2.2 mi (3.5 km) downstream from Ogle Creek, and 3.0 mi (4.8 km) west of Covington.

DRAINAGE AREA.--164 mi^2 (425 km^2).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1929-30, 1932-34, 1942. WSP 1303: 1929-35(M), 1937-38(M), 1941-48(M). WSP 2104: Drainage area. WDR VA-74-1: 1969(M), 1972, 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 1,294.70 ft (394.625 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 8, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation caused by dam 7.9 mi (12.7 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 166 ft^3/s (4.701 m^3/s), 13.75 in/yr (349 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft^3/s (776 m^3/s) June 21, 1972, gage height, 15.65 ft (4.770 m), from rating curve extended above 4,500 ft^3/s (130 m^3/s) on basis of step-backwater computations and contracted-opening measurement at gage height 15.65 ft (4.770 m); minimum, 2.0 ft^3/s (0.057 m^3/s) July 4, 1970; minimum daily, 7.0 ft^3/s (0.20 m^3/s) Sept. 9, 1966; minimum gage height, 0.69 ft (0.210 m) June 6, July 14, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 18 ft (5.5 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1300	2430	68.8	5.81	1.771	Apr. 27	2030	3120	88.4	6.52	1.987
Feb. 3	1800	3600	102	6.96	2.121	June 13	0730	*6570	186	9.32	2.841
Feb. 17	0030	2660	75.3	6.06	1.847						

Minimum discharge, 12 ft^3/s (0.34 m^3/s) Aug. 4, gage height, 1.07 ft (0.326 m), result of unknown regulation upstream; minimum daily, 13 ft^3/s (0.37 m^3/s) Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	32	33	70	283	146	140	290	141	48	34	19
2	16	28	44	70	251	259	124	235	106	41	29	19
3	15	25	51	212	2190	376	120	195	93	40	26	17
4	15	23	48	1780	1520	341	115	163	72	47	24	16
5	15	22	45	873	639	293	106	140	120	71	23	15
6	15	22	41	387	425	247	104	123	136	53	38	15
7	19	21	39	264	303	727	97	112	112	43	63	15
8	17	19	37	193	238	351	89	105	92	38	63	15
9	17	19	35	155	229	542	91	96	85	35	47	14
10	16	18	31	118	212	402	91	86	105	33	42	14
11	15	18	27	105	185	327	85	78	172	33	35	14
12	15	17	28	115	164	306	83	72	510	33	31	14
13	15	17	23	120	155	293	82	67	4780	31	27	14
14	14	17	31	114	135	294	81	62	1310	32	25	14
15	14	16	82	102	126	679	77	58	519	30	24	15
16	15	16	111	84	164	1070	73	54	316	28	23	14
17	16	17	90	69	1340	1020	77	51	233	27	22	13
18	16	16	74	90	1440	618	137	48	171	27	21	13
19	17	15	61	76	658	433	151	49	133	30	20	13
20	17	18	50	62	473	571	142	45	109	29	19	16
21	16	19	49	180	387	647	129	47	92	27	18	16
22	17	19	124	441	306	534	113	48	80	25	17	28
23	18	18	770	342	243	414	101	54	71	24	17	22
24	17	20	596	439	212	327	93	55	63	23	17	18
25	17	21	290	327	183	269	89	168	57	22	17	17
26	23	21	192	233	153	244	398	109	53	21	16	22
27	215	22	144	168	147	210	1240	78	47	20	17	36
28	148	28	115	160	142	184	1500	68	48	22	18	29
29	74	34	94	132	---	164	621	61	46	22	16	23
30	49	31	78	106	---	152	391	217	47	28	16	20
31	38	---	67	117	---	146	---	223	---	36	18	---
TOTAL	945	629	3500	7704	12903	13086	6740	3257	9909	1019	823	530
MEAN	30.5	21.0	113	249	461	422	225	105	330	32.9	26.5	17.7
MAX	215	34	770	1780	2190	1070	1500	290	4780	71	63	36
MIN	14	15	23	62	126	146	73	45	46	20	16	13
CFSM	.19	.13	.69	1.52	2.81	2.57	1.37	.64	2.01	.20	.16	.11
IN.	.21	.14	.79	1.75	2.93	2.97	1.53	.74	2.25	.23	.19	.12

CAL YR 1981 TOTAL 37914 MEAN 104 MAX 2930 MIN 12 CFSM .63 IN 8.60
WTR YR 1982 TOTAL 61045 MEAN 167 MAX 4780 MIN 13 CFSM 1.02 IN 13.85

02013100 JACKSON RIVER BELOW DUNLAP CREEK, AT COVINGTON, VA

LOCATION.--Lat 37°47'19", long 80°00'03", Covington City, Hydrologic Unit 02080201, on left bank in city recreation park, 0.5 mi (0.8 km) downstream from Dunlap Creek.

DRAINAGE AREA.--614 mi^2 (1,590 km^2).

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR VA-76-1: 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 1,206.50 ft (367.741 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diurnal fluctuation at low flow caused by Westvaco plant 0.8 mi (1.3 km) upstream and occasionally by dam on Dunlap Creek 12.7 mi (20.4 km) upstream. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 19.9 mi (32.0 km) upstream. Diversion by Westvaco plant averages 47 ft^3/s (1.33 m^3/s) for industrial use of which approximately 42 ft^3/s (1.19 m^3/s) is returned above station. Diversion 2.0 mi (3.2 km) above station for town of Covington water supply averages less than 4.0 ft^3/s (0.11 m^3/s). Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 721 ft^3/s (20.42 m^3/s), 15.95 in/yr (405 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft^3/s (657 m^3/s), Apr. 5, 1977, gage height, 19.85 ft (6.050 m); minimum, 41 ft^3/s (1.16 m^3/s) Jan. 5, 1981, gage height, 4.38 ft (1.335 m), result of freezeup; minimum daily, 67 ft^3/s (1.90 m^3/s) Sept. 3, 27-29, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 24.36 ft (7.425 m), discharge, about 34,000 ft^3/s (960 m^3/s), from floodmarks, and flood of Dec. 27, 1973, reached a stage of 22.09 ft (6.733 m), from floodmarks, discharge, about 28,000 ft^3/s (790 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,870 ft^3/s (251 m^3/s) June 13, gage height, 11.84 ft (3.609 m); minimum, 61 ft^3/s (1.73 m^3/s) Oct. 1; minimum daily, 74 ft^3/s (2.10 m^3/s) Oct. 1; minimum gage height, 4.43 ft (1.350 m) Oct. 1, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	127	128	185	1290	782	590	982	1170	367	357	238
2	81	122	148	184	2430	914	671	902	881	344	338	243
3	81	117	156	328	5100	1060	665	843	435	343	329	239
4	81	115	152	2290	4710	1020	652	664	422	354	319	240
5	81	114	148	1360	4260	964	734	623	510	380	320	242
6	81	112	142	898	2390	916	785	509	528	360	342	243
7	81	113	141	1260	2200	1630	948	432	660	312	358	234
8	81	113	138	1070	1600	2230	936	412	873	345	377	227
9	81	111	137	840	873	2490	852	394	590	361	351	225
10	209	111	133	761	1100	1720	705	375	793	388	326	241
11	285	111	126	627	1670	1210	401	348	1790	362	284	238
12	285	109	129	465	1850	1180	395	342	1670	347	315	239
13	287	108	122	428	1390	1150	409	339	6950	340	310	240
14	286	110	142	412	1210	1210	449	331	5760	347	308	243
15	281	108	205	388	713	1860	481	326	5230	353	301	238
16	282	108	237	346	702	2640	541	320	4620	343	301	239
17	284	108	209	307	2540	2800	451	320	2580	338	301	241
18	289	106	183	342	4480	2480	537	308	1200	338	309	240
19	286	107	166	336	3710	2190	632	314	713	337	307	242
20	160	112	148	326	2280	2870	793	314	657	337	299	247
21	98	112	134	501	1510	4970	720	308	566	335	297	252
22	95	112	219	904	1640	4660	533	314	437	327	301	278
23	100	110	967	759	1400	4050	430	325	422	327	304	256
24	101	119	955	1070	1150	2880	359	324	401	329	302	245
25	97	115	501	921	1050	1630	352	440	389	322	303	243
26	116	114	352	797	796	1530	801	382	381	321	295	270
27	503	116	283	604	791	1090	2100	343	372	320	301	315
28	329	122	240	461	778	1040	2830	379	366	327	299	270
29	190	129	215	433	---	939	1850	479	365	328	297	252
30	153	127	195	403	---	809	1470	798	364	363	299	244
31	137	---	185	429	---	733	---	1280	---	381	292	---
TOTAL	5575	3418	7336	20435	55613	57647	24072	14770	42095	10676	9742	7404
MEAN	180	114	237	659	1986	1860	802	476	1403	344	314	247
MAX	503	129	967	2290	5100	4970	2830	1280	6950	388	377	315
MIN	74	106	122	184	702	733	352	308	364	312	284	225
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122
MEAN‡	302	158	526	898	1931	1860	805	481	1356	275	188	125
CFSM‡	.49	.26	.86	1.46	3.14	3.03	1.31	.78	2.21	.45	.31	.20
IN‡	.57	.29	.99	1.69	3.28	3.49	1.46	.90	2.46	.52	.35	.23

CAL YR 1981 TOTAL 131234 MEAN 360 MAX 4930 MIN 67 MEAN‡ 454 CFSM‡ .74 IN‡ 10.04
WTR YR 1982 TOTAL 258783 MEAN 709 MAX 6950 MIN 74 MEAN‡ 734 CFSM‡ 1.20 IN‡ 16.23

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02014000 POTTS CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°43'44", long 80°02'33", Alleghany County, Hydrologic Unit 02080201, on left bank at downstream side of bridge on State Highway 18, 0.8 mi (1.3 km) downstream from Blue Spring Creek, and 5.2 mi (8.4 km) southwest of Covington.

DRAINAGE AREA.--153 mi² (396 km²).

PERIOD OF RECORD.--October 1928 to September 1956, October 1965 to current year.

REVISED RECORDS.--WSP 1723: 1935, 1936(M), 1940(M), 1942(M), 1948-49(M), 1951-52(M), 1954(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,273.93 ft (388.294 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1956, nonrecording gage at site 1.3 mi (2.1 km) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 178 ft³/s (5.041 m³/s), 15.80 in/yr (401 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s (351 m³/s) June 21, 1972, gage height, 12.33 ft (3.758 m); minimum observed, 13 ft³/s (0.37 m³/s) Nov. 29, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,360 ft³/s (123 m³/s) at 1730 hours June 13, gage height, 8.24 ft (2.512 m), no other peak above base of 2,400 ft³/s (68 m³/s); minimum, 18 ft³/s (0.51 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	42	39	72	213	149	135	318	90	73	40	27
2	19	38	44	84	191	218	121	268	82	62	36	31
3	19	35	52	200	1350	344	120	226	71	57	32	29
4	20	33	48	1020	1360	318	120	189	66	79	31	25
5	20	32	45	918	728	295	112	162	95	84	30	23
6	22	32	46	499	514	277	115	143	100	67	34	23
7	23	31	43	361	380	574	111	130	88	58	36	23
8	20	29	41	285	298	679	103	122	80	60	70	23
9	20	29	40	225	273	524	108	113	128	55	54	23
10	20	28	37	145	243	430	111	102	152	51	49	23
11	20	27	31	120	192	366	104	94	146	53	42	23
12	20	27	35	115	163	338	100	88	565	212	36	22
13	21	26	32	110	155	303	99	82	3540	103	32	23
14	21	26	39	105	134	297	97	78	1630	85	32	22
15	21	26	56	100	135	534	93	73	748	75	31	22
16	22	26	69	95	165	842	90	69	487	67	30	22
17	22	26	62	92	533	956	90	65	370	61	31	22
18	23	26	64	77	853	662	103	62	271	60	39	22
19	23	27	45	88	609	513	98	61	209	70	30	22
20	23	27	38	84	488	464	95	64	164	62	27	23
21	23	27	38	163	408	465	95	64	134	54	27	24
22	23	27	76	339	335	424	92	70	117	48	26	42
23	25	27	220	296	273	371	87	71	109	43	25	36
24	25	29	396	336	237	323	85	78	95	40	25	27
25	25	34	232	276	202	283	84	92	86	42	25	25
26	32	36	160	214	167	255	286	87	79	39	25	35
27	268	36	126	147	160	216	669	90	74	35	25	56
28	154	37	106	147	156	180	774	105	71	35	25	42
29	80	40	91	134	---	157	519	94	75	36	25	31
30	60	37	78	116	---	144	397	114	81	40	25	27
31	49	---	63	133	---	138	---	110	---	42	25	---
TOTAL	1181	923	2492	7096	10915	12039	5213	3484	10043	1948	1020	818
MEAN	38.1	30.8	80.4	229	390	388	174	112	335	62.8	32.9	27.3
MAX	268	42	396	1020	1360	956	774	318	3540	212	70	56
MIN	18	26	31	72	134	138	84	61	66	35	25	22
CFSM	.25	.20	.53	1.50	2.55	2.54	1.14	.73	2.19	.41	.22	.18
IN.	.29	.22	.61	1.73	2.65	2.93	1.27	.85	2.44	.47	.25	.20

CAL YR 1981 TOTAL 34956 MEAN 95.8 MAX 1540 MIN 18 CFSM .63 IN 8.50
WTR YR 1982 TOTAL 57172 MEAN 157 MAX 3540 MIN 18 CFSM 1.03 IN 13.90

02015700 BULLPASTURE RIVER AT WILLIAMSVILLE, VA

LOCATION.--Lat 38°11'43", long 79°34'14", Bath County, Hydrologic Unit 02080201, on left bank 15 ft (5 m) downstream from bridge on State Highway 614 at Williamsville and 0.62 mi (1.00 km) upstream from mouth.

DRAINAGE AREA.--110 mi^2 (285 km^2).

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,610.14 ft (490.771 m) National Geodetic Vertical Datum of 1929. Prior to July 12, 1974, at site 700 ft (213 m) upstream at datum 11.84 ft (3.609 m) higher.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 145 ft^3/s (4.106 m^3/s), 17.90 in/yr (455 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,430 ft^3/s (267 m^3/s) Apr. 5, 1977, from rating curve extended above 3,300 ft^3/s (93 m^3/s); maximum gage height, 10.84 ft (3.304 m) Dec. 26, 1973, from floodmarks; minimum discharge, 19 ft^3/s (0.54 m^3/s) Jan. 4, 1981, result of freezeup; minimum daily, 23 ft^3/s (0.65 m^3/s) Sept. 8, 9, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 27	0630	2970	84.1	6.24	1.902
Jan. 31	2230	2850	80.7	6.16	1.878
Feb. 3	1700	2240	63.4	5.75	1.753
Feb. 17	1700	2360	66.8	5.83	1.777
Mar. 20	1330	*7060	200	8.39	2.557
June 10	0830	2270	64.3	5.77	1.759
June 13	0930	6350	180	8.07	2.460

Minimum discharge, 27 ft^3/s (0.76 m^3/s) Oct. 1, gage height, 2.51 ft (0.765 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	84	54	90	1090	160	157	160	132	72	76	35
2	30	76	110	84	382	183	136	143	114	66	58	39
3	30	68	101	90	1560	189	201	130	119	61	55	36
4	29	62	90	914	1020	170	210	119	132	68	51	33
5	29	60	86	582	589	167	183	110	316	107	53	32
6	29	60	74	320	400	162	189	102	204	73	79	31
7	30	54	72	257	270	438	162	99	160	64	81	31
8	29	51	72	210	213	450	150	95	132	64	76	30
9	29	47	70	173	820	314	157	90	119	68	66	33
10	28	45	57	114	527	244	157	84	920	70	60	30
11	28	43	60	101	331	213	141	79	482	186	53	30
12	28	42	60	101	236	275	134	76	526	174	51	30
13	29	41	48	96	204	244	127	73	3650	97	47	30
14	29	41	58	92	173	229	119	70	1310	79	46	30
15	29	41	93	91	157	236	112	68	655	72	47	30
16	29	40	95	83	263	408	106	66	400	72	45	30
17	29	40	78	66	1430	662	106	62	371	73	43	30
18	30	39	78	67	1000	596	127	61	232	86	45	29
19	30	39	62	74	648	437	108	62	186	73	42	29
20	30	42	54	73	520	3280	106	70	155	78	40	30
21	30	42	53	174	482	1680	104	64	134	66	35	30
22	30	40	67	148	359	888	97	66	121	60	34	41
23	30	35	221	110	275	575	91	73	110	64	33	39
24	30	40	261	114	244	418	88	68	99	81	33	31
25	30	40	192	91	217	326	86	79	91	61	34	31
26	39	39	157	86	180	293	200	435	86	55	32	35
27	1560	42	139	67	173	229	248	183	81	53	32	70
28	417	55	121	78	167	189	275	146	78	50	33	42
29	180	50	108	79	---	170	213	119	76	53	32	35
30	127	45	86	78	---	157	178	180	76	51	31	33
31	101	---	79	547	---	155	---	160	---	92	34	---
TOTAL	3155	1443	2956	5250	13930	14137	4468	3392	11267	2389	1477	1015
MEAN	102	48.1	95.4	169	498	456	149	109	376	77.1	47.6	33.8
MAX	1560	84	261	914	1560	3280	275	435	3650	186	81	70
MIN	27	35	48	66	157	155	86	61	76	50	31	29
CFSM	.93	.44	.87	1.54	4.53	4.15	1.36	.99	3.42	.70	.43	.31
IN.	1.07	.49	1.00	1.78	4.71	4.78	1.51	1.15	3.81	.81	.50	.34

CAL YR 1981 TOTAL 29228 MEAN 80.1 MAX 1560 MIN 25 CFSM .73 IN 9.88
WTR YR 1982 TOTAL 64879 MEAN 178 MAX 3650 MIN 27 CFSM 1.62 IN 21.94

02016000 COWPASTURE RIVER NEAR CLIFTON FORGE, VA

LOCATION.--Lat 37°47'30", long 79°45'35", Alleghany County, Hydrologic Unit 02080201, on left bank 100 ft (30 m) downstream from highway bridge, 2.5 mi (4.0 km) upstream from confluence with Jackson River, and 4.0 mi (6.4 km) southeast of Clifton Forge.

DRAINAGE AREA.--461 mi² (1,194 km²).

PERIOD OF RECORD.--March 1925 to current year. Records for May 1907 to August 1908, published in WSP 242, are unreliable and should not be used.

REVISED RECORDS.--WSP 952: 1925-41. WSP 2104: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,006.93 ft (306.912 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to October 1934, nonrecording gage at site 100 ft (30 m) upstream at present datum.

REMARKS.--Records good. Low flow affected by springs and by occasional regulation from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 524 ft³/s (14.84 m³/s), 15.44 in/yr (392 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,200 ft³/s (969 m³/s) Mar. 18, 1936, gage height, 18.62 ft (5.675 m), from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of slope-area measurement at gage height 15.70 ft (4.785 m); minimum, 38 ft³/s (1.08 m³/s) Sept. 2, 1932; minimum daily, 40 ft³/s (1.13 m³/s) Sept. 1, 1932; minimum gage height, 1.43 ft (0.436 m) Jan. 31, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 20.8 ft (6.34 m), from floodmarks, discharge, about 45,000 ft³/s (1,300 m³/s), from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of records for other stations in James River basin.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	2330	5280	150	7.52	2.292	Mar. 21	0630	11800	334	10.94	3.335
Feb. 4	0030	8960	254	9.60	2.926	June 10	2400	5480	155	7.65	2.332
Feb. 18	0730	6260	177	8.13	2.478	June 14	0230	*14400	408	12.00	3.658

Minimum discharge, 59 ft³/s (1.67 m³/s) Oct. 1, gage height, 1.55 ft (0.472 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	247	132	255	2660	512	494	747	776	202	226	92
2	64	205	216	261	1910	589	457	632	515	184	215	95
3	65	179	326	311	5520	756	438	545	412	173	163	91
4	64	161	309	2160	6420	738	539	474	471	173	141	87
5	66	147	267	3150	2680	667	530	417	768	178	157	83
6	65	141	237	1520	1700	632	507	375	931	197	200	79
7	63	132	209	994	1260	1400	500	348	657	181	327	77
8	61	126	194	797	949	2360	438	328	498	172	325	76
9	61	119	185	656	834	1520	433	310	406	166	322	76
10	62	114	175	498	1720	1120	457	285	2220	169	240	76
11	62	109	162	222	1170	905	445	261	2910	226	190	77
12	63	105	143	305	886	841	417	244	1840	365	160	74
13	63	102	139	380	745	894	400	229	12600	404	140	74
14	62	98	145	340	652	842	386	216	8790	258	130	73
15	61	97	318	310	571	855	360	206	2570	212	123	73
16	61	95	545	290	584	1210	330	196	1510	240	118	71
17	61	93	415	268	2190	2030	338	188	1220	314	119	70
18	62	94	315	256	4830	1850	721	179	987	268	141	69
19	65	90	282	293	2310	1450	573	172	750	251	137	68
20	63	95	230	286	1730	3730	470	173	607	305	141	73
21	63	96	165	376	1440	7730	428	178	500	319	119	77
22	64	98	224	969	1230	3410	387	174	427	238	107	93
23	69	93	395	748	980	2010	349	185	373	194	100	118
24	69	99	828	627	820	1420	321	196	327	175	97	102
25	70	101	824	541	717	1090	304	264	290	260	96	89
26	77	102	629	455	622	1010	778	458	265	215	94	105
27	1750	98	507	380	560	855	1680	779	245	175	93	227
28	2790	103	430	300	539	707	1940	432	229	154	93	211
29	832	117	365	345	---	609	1280	371	218	142	92	151
30	458	124	314	337	---	548	933	584	210	163	88	114
31	318	---	260	367	---	512	---	833	---	219	87	---
TOTAL	7815	3580	9885	18997	48229	44802	17633	10979	44522	6892	4781	2841
MEAN	252	119	319	613	1722	1445	588	354	1484	222	154	94.7
MAX	2790	247	828	3150	6420	7730	1940	833	12600	404	327	227
MIN	61	90	132	222	539	512	304	172	210	142	87	68
CFSM	.55	.26	.69	1.33	3.74	3.13	1.28	.77	3.22	.48	.33	.21
IN.	.63	.29	.80	1.53	3.89	3.62	1.42	.89	3.59	.56	.39	.23

CAL YR 1981 TOTAL 100531 MEAN 275 MAX 3480 MIN 55 CFSM .60 IN 8.11
WTR YR 1982 TOTAL 220956 MEAN 605 MAX 12600 MIN 61 CFSM 1.31 IN 17.83

02016500 JAMES RIVER AT LICK RUN, VA

LOCATION.--Lat 37°46'25", long 79°47'05", Botetourt County, Hydrologic Unit 02080201, on right bank at community of Lick Run, 1,000 ft (305 m) downstream from bridge on U.S. Highway 220, 0.9 mi (1.4 km) downstream from confluence of Cowpasture and Jackson Rivers, 1.8 mi (2.9 km) south of Iron Gate, and at mile 342.3 (550.8 km).

DRAINAGE AREA.--1,373 mi² (3,556 km²).

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1936-37. WSP 972: 1927, 1930(M), 1932(M), 1935-36. WSP 1303: 1927-28(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 978.30 ft (298.186 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by Moomaw Lake (station 02011795) 43.8 mi (70.5 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 1,603 ft³/s (45.40 m³/s), 15.85 in/yr (403 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,600 ft³/s (1,890 m³/s) Mar. 18, 1936; maximum gage height, 27.01 ft (8.233 m) June 21, 1972; minimum discharge, 133 ft³/s (3.77 m³/s) Jan. 6, 1981, result of freezeup; minimum daily, 156 ft³/s (4.42 m³/s) Oct. 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 33 ft (10.1 m), discharge, about 120,000 ft³/s (3,400 m³/s). Flood in March 1913 reached a stage of 30.4 ft (9.27 m), from floodmarks, discharge, about 98,000 ft³/s (2,800 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,900 ft³/s (818 m³/s) June 13, gage height, 17.79 ft (5.422 m); minimum, 192 ft³/s (5.44 m³/s) Oct. 1, gage height, 1.44 ft (0.439 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	541	380	629	3900	1680	1450	2480	2320	768	774	460
2	207	463	510	648	4930	1930	1440	2160	1880	702	714	431
3	210	414	668	821	13300	2480	1440	1930	1140	680	635	421
4	205	382	654	5680	15000	2440	1530	1710	1160	702	605	407
5	209	362	593	6810	9180	2260	1490	1410	1590	750	625	398
6	213	356	540	3260	5450	2150	1710	1290	1800	744	680	398
7	211	331	497	2910	4330	3860	1620	1140	1490	696	971	393
8	205	323	474	2410	3560	6280	1660	1080	1700	645	978	384
9	201	314	453	1900	2240	5360	1660	1020	1410	738	922	365
10	230	307	434	1560	3230	4210	1500	950	3170	714	780	393
11	456	299	397	1160	3180	2870	1210	887	5290	774	680	388
12	459	293	371	1030	3300	2760	1100	817	4320	1030	595	379
13	457	283	365	1070	2540	2710	1080	798	25600	1020	600	384
14	455	278	392	980	2320	2640	1120	768	18300	831	575	384
15	454	277	693	942	1650	3280	1080	738	9670	750	560	379
16	452	276	1070	867	1620	5290	1130	714	7550	786	550	379
17	451	275	909	724	4930	6610	1100	690	5110	817	545	369
18	464	274	738	739	11600	5830	1600	670	2980	786	595	369
19	466	270	635	770	7870	4880	1480	660	1950	768	570	369
20	420	287	489	773	5450	7310	1580	660	1680	831	570	388
21	231	288	822	1000	3970	14200	1520	670	1460	824	535	393
22	214	284	959	2220	3580	9540	1250	670	1180	720	515	510
23	224	278	1400	1890	3200	7370	1080	702	1080	660	510	490
24	230	314	2700	1910	2530	5680	971	726	992	645	500	440
25	224	330	1900	1740	2320	3550	922	936	922	720	495	416
26	252	321	1380	1520	1890	3300	2080	1150	873	675	485	500
27	2780	319	1130	1200	1760	2580	4720	1450	831	625	495	780
28	3810	329	979	1020	1730	2230	6940	1040	792	605	500	655
29	1350	356	852	1030	---	2030	4460	1120	780	605	485	540
30	875	371	742	972	---	1760	3420	1840	774	675	480	475
31	659	---	644	1050	---	1680	---	2560	---	792	490	---
TOTAL	17475	9795	24770	51235	130560	130750	55343	35436	109794	23078	19014	13037
MEAN	564	327	799	1653	4663	4218	1845	1143	3660	744	613	435
MAX	3810	541	2700	6810	15000	14200	6940	2560	25600	1030	978	780
MIN	201	270	365	629	1620	1680	922	660	774	605	480	365
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122
MEAN‡	686	371	1088	1892	4608	4218	1848	1148	3613	675	487	313
CFSM‡	.50	.27	.79	1.38	3.36	3.07	1.35	.84	2.63	.49	.35	.23
IN‡	.58	.30	.91	1.59	3.50	3.54	1.51	.97	2.93	.56	.40	.26

CAL YR 1981 TOTAL 308275 MEAN 845 MAX 12400 MIN 180 MEAN‡ 939 CFSM‡ .68 IN‡ 9.23
WTR YR 1982 TOTAL 620287 MEAN 1699 MAX 25600 MIN 201 MEAN‡ 1724 CFSM‡ 1.26 IN‡ 17.10

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02017500 JOHNS CREEK AT NEW CASTLE, VA

LOCATION.--Lat 37°30'22", long 80°06'25", Craig County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) downstream from bridge on State Highway 615 at New Castle and 1,700 ft (518 m) upstream from mouth.

DRAINAGE AREA.--104 mi² (269 km²).

PERIOD OF RECORD.--April 1926 to current year.

REVISED RECORDS.--WSP 972: 1935-36(M), 1940(M). WSP 1203: 1928, 1935. WSP 1303: 1927(M), 1928, 1929-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.30 ft (382.311 m) National Geodetic Vertical Datum of 1929. Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 127 ft³/s (3.597 m³/s), 16.58 in/yr (421 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s (227 m³/s) Jan. 23, 1935, from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 12.48 ft (3.804 m) June 21, 1972; minimum discharge, 6.0 ft³/s (0.17 m³/s) Dec. 5, 1946, result of freezeup; minimum daily, 6.6 ft³/s (0.19 m³/s) Oct. 1, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) at 1200 hours June 13, gage height, 9.37 ft (2.856 m), no other peak above base of 2,100 ft³/s (59 m³/s); minimum, 8.0 ft³/s (0.23 m³/s) Oct. 2, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	31	30	63	172	132	108	229	109	53	21	18
2	9.0	28	36	64	158	193	99	196	97	44	19	19
3	9.0	25	38	172	1320	322	97	173	82	41	18	14
4	9.0	24	37	885	1170	284	92	151	77	56	17	12
5	9.3	23	37	668	677	248	85	132	114	48	17	12
6	9.9	22	35	424	498	232	89	117	109	39	15	11
7	9.6	20	33	345	377	493	85	105	97	34	16	11
8	9.0	19	32	300	306	515	78	97	83	33	55	11
9	9.1	19	31	249	275	392	80	88	172	31	71	11
10	9.1	19	29	192	231	325	80	78	475	29	77	11
11	10	19	27	154	186	284	74	71	395	43	62	11
12	12	18	29	146	162	251	70	65	336	83	47	10
13	11	18	26	125	148	221	68	59	2420	54	36	10
14	12	18	34	116	131	198	66	55	1060	46	30	10
15	13	17	44	103	123	315	65	50	605	39	26	11
16	10	17	70	103	147	569	62	47	442	40	31	10
17	11	17	62	76	503	598	70	44	361	64	31	11
18	11	17	53	92	673	443	100	41	258	50	22	9.3
19	12	17	48	81	507	362	89	51	203	42	20	9.6
20	14	18	33	73	438	340	85	51	158	36	18	10
21	17	18	30	202	369	356	83	50	126	32	16	12
22	16	18	48	366	306	304	78	61	105	29	14	23
23	17	17	127	286	256	264	73	119	91	28	14	17
24	18	20	212	260	223	233	69	86	82	31	14	12
25	19	22	173	235	185	209	67	132	67	28	13	12
26	28	23	145	192	158	191	263	117	58	25	12	16
27	184	24	121	158	150	169	443	160	51	23	12	24
28	99	25	99	150	142	150	499	173	56	21	12	18
29	63	25	81	127	---	135	339	142	66	21	12	14
30	46	27	66	112	---	124	274	149	64	20	11	13
31	36	---	57	116	---	116	---	134	---	20	13	---
TOTAL	751.0	625	1923	6635	9991	8968	3830	3223	8419	1183	792	392.9
MEAN	24.2	20.8	62.0	214	357	289	128	104	281	38.2	25.5	13.1
MAX	184	31	212	885	1320	598	499	229	2420	83	77	24
MIN	9.0	17	26	63	123	116	62	41	51	20	11	9.3
CFSM	.23	.20	.60	2.06	3.43	2.78	1.23	1.00	2.70	.37	.25	.13
IN.	.27	.22	.69	2.37	3.57	3.21	1.37	1.15	3.01	.42	.28	.14

CAL YR 1981 TOTAL 25299.0 MEAN 69.3 MAX 2120 MIN 8.3 CFSM .67 IN 9.05
WTR YR 1982 TOTAL 46732.9 MEAN 128 MAX 2420 MIN 9.0 CFSM 1.23 IN 16.72

02018000 CRAIG CREEK AT PARR, VA

LOCATION.--Lat 37°39'57", long 79°54'42", Botetourt County, Hydrologic Unit 02080201, on right bank 12 ft (4 m) upstream from Chesapeake and Ohio Railway bridge, 700 ft (213 m) downstream from Stony Run, 0.2 mi (0.3 km) northeast of Horton, 0.4 mi (0.6 km) northwest of Parr, and 12 mi (19 km) upstream from mouth.

DRAINAGE AREA.--329 mi^2 (852 km^2).

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1935-36. WSP 1303: 1929-30(M), 1932-35(M), 1937-38(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 992.50 ft (302.514 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 384 ft^3/s (10.87 m^3/s), 15.85 in/yr (403 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft^3/s (572 m^3/s) June 21, 1972, gage height, 19.29 ft (5.880 m), from high-water mark in well; minimum, 20 ft^3/s (0.57 m^3/s) probably occurred Dec. 21, 25, 1980, or Jan. 4, 1981, gage height, 3.20 ft (0.975 m), result of freezeup; minimum daily, 25 ft^3/s (0.71 m^3/s) Sept. 4, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft^3/s (120 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 3	2230	6040	171	10.24	3.121	June 14	0100	*6670	189	10.63	3.240

Minimum discharge, 29 ft^3/s (0.82 m^3/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	90	71	158	502	370	316	718	338	164	61	45
2	31	78	78	166	574	453	284	607	375	142	61	48
3	31	70	90	263	2530	966	280	519	343	125	60	51
4	31	65	95	2020	4630	1020	276	436	396	125	56	48
5	33	62	94	2440	2100	862	252	375	602	150	55	42
6	36	60	90	1230	1370	760	244	330	596	134	55	40
7	39	57	88	869	1020	1090	244	298	448	115	71	39
8	38	56	85	712	808	1930	230	272	356	102	182	38
9	38	55	82	590	712	1350	230	252	494	95	188	38
10	38	53	78	420	646	1060	236	230	546	97	216	37
11	39	55	65	390	536	876	230	208	1810	102	185	37
12	40	53	72	370	453	778	216	185	995	147	144	37
13	41	53	66	350	410	676	212	169	3910	169	115	37
14	43	53	77	340	375	607	208	161	4260	132	94	37
15	44	53	90	330	343	634	198	150	1870	115	80	37
16	46	52	161	320	352	1380	192	142	1260	106	72	37
17	51	52	222	310	905	1880	192	132	1060	99	144	36
18	46	52	182	300	2290	1450	272	125	760	132	134	35
19	45	52	144	340	1510	1120	316	118	602	150	88	36
20	46	53	90	316	1210	988	294	130	475	118	71	36
21	48	52	86	348	1020	967	280	134	375	97	61	39
22	49	52	139	1080	848	918	260	153	316	87	55	56
23	53	51	166	1040	718	814	233	325	276	80	52	61
24	58	56	644	802	624	724	222	298	240	80	49	64
25	56	60	612	712	552	646	216	256	216	88	47	50
26	65	61	458	590	448	596	416	307	188	83	45	51
27	423	64	356	464	400	508	1160	264	166	74	44	70
28	552	65	289	470	395	436	1540	395	172	66	44	80
29	244	66	233	450	---	380	1170	405	166	62	43	66
30	155	66	195	320	---	352	883	366	172	64	42	56
31	111	---	166	294	---	330	---	390	---	64	45	---
TOTAL	2601	1767	5364	18804	28281	26921	11302	8850	23783	3364	2659	1384
MEAN	83.9	58.9	173	607	1010	868	377	285	793	109	85.8	46.1
MAX	552	90	644	2440	4630	1930	1540	718	4260	169	216	80
MIN	31	51	65	158	343	330	192	118	166	62	42	35
CFSM	.26	.18	.53	1.85	3.07	2.64	1.15	.87	2.41	.33	.26	.14
IN.	.29	.20	.61	2.13	3.20	3.04	1.28	1.00	2.69	.38	.30	.16

CAL YR 1981 TOTAL 69911 MEAN 192 MAX 4770 MIN 31 CFSM .58 IN 7.90
WTR YR 1982 TOTAL 135080 MEAN 370 MAX 4630 MIN 31 CFSM 1.13 IN 15.27

02018500 CATAWBA CREEK NEAR CATAWBA, VA

LOCATION.--Lat 37°28'05", long 80°00'20", Botetourt County, Hydrologic Unit 02080201, on right bank 80 ft (24 m) upstream from highway bridge, 1.0 mi (1.6 km) downstream from Little Catawba Creek, 1.9 mi (3.1 km) west of Haymakertown, and 8.2 mi (13.2 km) northeast of Catawba.

DRAINAGE AREA.--34.3 mi^2 (88.8 km^2).

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1303: 1944-45(M). WSP 2104: Drainage area. WDR VA-72-1: 1954, 1955(P), 1957-58(P), 1959, 1960-62(P), 1963, 1964(M), 1965-67(P), 1968(M), 1969, 1970(M), 1971.

GAGE.--Water-stage recorder. Datum of gage is 1,299.96 ft (396.228 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1953, nonrecording gage at site 80 ft (24 m) downstream at same datum.

REMARKS.--Records good. At a point 5.3 mi (8.5 km) above station, there is an occasional transmountain diversion through a tunnel into Roanoke River basin for municipal water supply of city of Roanoke since December 1974. Prior to October 1976, monthly means adjusted for pumpage by Citadel Cement Corp. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 34.7 ft^3/s (0.983 m^3/s), 13.74 in/yr (349 mm/yr), adjusted for pumpage from October 1952 to September 1976.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft^3/s (219 m^3/s) June 21, 1972, gage height, 10.35 ft (3.155 m), from rating curve extended above 1,100 ft^3/s (31 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.36 ft^3/s (0.010 m^3/s) Jan. 3, 1981, result of freezeup; minimum daily, 0.67 ft^3/s (0.019 m^3/s) Aug. 14, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.26 ft (4.042 m), from information by observer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 562 ft^3/s (15.9 m^3/s) Feb. 3, gage height, 3.84 ft (1.170 m), no peak above base of 600 ft^3/s (17 m^3/s); minimum, 0.93 ft^3/s (0.026 m^3/s) Dec. 9-10, gage height, 1.14 ft (0.347 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	2.9	2.4	4.1	10	11	25	20	12	9.6	8.4	8.0
2	1.8	3.2	2.7	4.7	11	17	23	20	11	11	8.0	6.9
3	2.2	2.9	1.8	14	233	23	24	19	11	12	7.6	5.9
4	2.2	2.9	1.6	39	61	21	21	18	16	12	7.3	5.3
5	2.0	2.4	1.8	21	31	18	21	15	22	11	8.4	5.0
6	2.2	2.4	1.6	14	22	19	22	15	18	11	8.8	5.3
7	1.4	2.0	1.8	10	18	44	18	15	16	11	20	5.3
8	1.4	1.4	1.6	8.8	14	38	12	14	14	16	16	5.0
9	1.6	1.6	1.2	8.0	13	28	13	13	15	13	16	5.0
10	1.8	1.4	1.2	6.2	11	24	13	13	57	11	13	5.3
11	2.2	1.8	1.4	5.5	9.6	25	13	12	48	9.6	11	5.0
12	2.4	2.0	1.4	4.8	9.6	58	12	12	32	8.0	11	4.7
13	2.7	1.8	1.4	4.3	8.8	50	12	12	169	11	10	4.7
14	2.0	1.6	2.7	3.7	8.4	43	12	11	69	13	8.8	5.0
15	2.2	1.6	5.3	3.3	8.0	54	12	11	41	10	8.0	4.7
16	2.2	1.8	6.2	3.0	11	71	11	10	53	9.2	8.8	4.4
17	2.2	1.8	4.4	2.7	57	83	12	10	55	9.2	10	4.1
18	2.4	1.6	3.2	3.0	53	71	11	10	24	12	9.6	4.1
19	2.2	1.6	2.2	3.5	33	62	11	10	20	11	8.0	4.4
20	2.2	1.8	2.0	4.7	26	63	11	10	17	11	7.3	5.3
21	2.4	1.6	2.0	10	22	64	10	10	16	10	6.6	5.6
22	2.2	1.6	2.9	10	19	58	10	11	15	9.6	6.2	10
23	2.7	2.0	7.3	8.0	16	53	10	11	14	12	6.6	7.6
24	2.9	2.4	7.6	7.0	14	48	10	11	13	12	6.2	5.9
25	2.9	2.2	5.6	6.4	13	47	10	10	13	10	5.9	5.3
26	5.6	2.0	4.4	5.6	11	40	25	9.6	12	10	5.6	9.2
27	28	2.0	3.8	4.9	12	35	33	10	14	10	5.9	13
28	8.8	2.0	5.6	4.5	10	31	32	10	13	9.2	5.9	8.8
29	6.2	1.8	4.7	4.8	---	28	27	10	12	8.8	5.3	6.9
30	5.0	2.2	3.2	5.0	---	27	24	12	12	8.8	5.3	5.6
31	3.2	---	2.9	6.2	---	26	---	10	---	8.8	5.6	---
TOTAL	111.0	60.3	97.9	240.7	765.4	1280	500	384.6	854	330.8	271.1	181.3
MEAN	3.58	2.01	3.16	7.76	27.3	41.3	16.7	12.4	28.5	10.7	8.75	6.04
MAX	28	3.2	7.6	39	233	83	33	20	169	16	20	13
MIN	1.4	1.4	1.2	2.7	8.0	11	10	9.6	11	8.0	5.3	4.1
CFSM	.10	.06	.09	.23	.80	1.20	.49	.36	.83	.31	.26	.18
IN.	.12	.07	.11	.26	.83	1.39	.54	.42	.93	.36	.29	.20

CAL YR 1981 TOTAL 2080.37 MEAN 5.70 MAX 176 MIN .67 CFSM .17 IN 2.26
WTR YR 1982 TOTAL 5077.10 MEAN 13.9 MAX 233 MIN 1.2 CFSM .41 IN 5.51

02019500 JAMES RIVER AT BUCHANAN, VA

LOCATION.--Lat 37°31'50", long 79°40'45", Botetourt County, Hydrologic Unit 02080201, on left bank at Chesapeake and Ohio Railway station at Buchanan, 300 ft (91 m) upstream from bridge on U.S. Highway 11, 1,000 ft (305 m) upstream from Purgatory Creek, 1.5 mi (2.4 km) downstream from Looney Creek, and at mile 306.4 (493.0 km).

DRAINAGE AREA.--2,075 mi^2 (5,374 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for August 1895 to Feb. 11, 1898, published in WSP 11, 15, and 27 are in error and should not be used. Gage-height records collected at this site since 1893 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 602: 1917-24. WSP 972: 1935-36. WSP 1303: 1898-1916, 1917-20(M), 1922(M), 1924(M). WSP 1383: 1927. WSP 2104: Drainage area. WDR VA-72-1: 1913(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 802.90 ft (244.724 m) National Geodetic Vertical Datum of 1929. Prior to July 1, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 79.6 mi (128.1 km) upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 2,466 ft^3/s (69.84 m^3/s), 16.14 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 ft^3/s (3,260 m^3/s) Mar. 27, 1913, gage height, 31 ft (9.4 m), from floodmarks; minimum, 202 ft^3/s (5.72 m^3/s) Sept. 8, 1966, gage height, 1.44 ft (0.439 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of 34.9 ft (10.64 m), from floodmark, discharge, about 142,000 ft^3/s (4,000 m^3/s), from rating curve extended above 110,000 ft^3/s (3,100 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,400 ft^3/s (1,230 m^3/s) June 13, gage height, 18.37 ft (5.599 m); minimum, 253 ft^3/s (7.16 m^3/s) Oct. 1, gage height, 1.66 ft (0.506 m); minimum daily, 257 ft^3/s (7.28 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	257	810	514	966	3620	2360	2170	3940	3200	1090	915	595
2	266	688	576	983	6480	2520	2000	3220	2650	1030	865	562
3	266	607	729	1300	14600	3570	2000	2870	2080	958	791	536
4	270	555	850	5300	27500	4080	2000	2550	2230	969	725	517
5	270	518	803	12400	14400	3680	2010	2160	2420	979	698	501
6	278	493	726	6400	9050	3370	2080	1970	2860	1030	835	484
7	299	465	677	4450	6480	4030	2030	1760	2460	976	1120	482
8	278	437	639	3780	5310	9390	2130	1620	2250	876	1500	473
9	278	428	607	3140	3810	8040	2090	1530	2150	926	1490	465
10	272	421	579	2570	4020	6680	1990	1430	2230	908	1270	443
11	303	410	539	1720	4010	4840	1840	1330	7240	1040	1080	470
12	515	403	525	1400	4050	4150	1540	1240	5450	1180	937	466
13	519	395	494	1670	3560	3910	1500	1170	28800	1400	826	455
14	514	386	518	1520	3080	3710	1490	1120	33600	1180	787	458
15	513	379	645	1450	2580	3740	1490	1070	14700	1030	742	459
16	515	377	1430	1390	2240	6410	1470	1030	10200	969	716	455
17	510	378	1470	1210	4520	9540	1490	987	7810	943	710	447
18	526	374	1210	1010	14800	9060	1820	952	4870	1030	937	440
19	528	371	995	1130	11600	7380	2120	920	3310	990	794	440
20	520	375	784	1160	8 70	6450	2020	918	2610	1030	728	450
21	475	388	609	1390	6280	13400	2040	981	2220	1020	689	475
22	312	384	707	2990	5130	11900	1860	952	1890	951	641	562
23	296	380	1240	3550	4660	9360	1610	1000	1640	857	620	637
24	306	410	3400	2930	3750	7380	1450	1050	1500	832	616	601
25	314	454	3360	2870	3250	5170	1330	1250	1370	801	604	559
26	352	459	2430	2550	2800	4330	1790	1500	1270	875	588	585
27	1720	450	1920	2050	2520	3760	5140	1950	1200	795	581	936
28	5820	453	1600	1730	2480	3120	8730	1700	1130	741	600	959
29	2570	462	1370	1650	---	2820	6960	1650	1100	734	586	786
30	1450	487	1180	1560	---	2530	5090	2200	1100	717	570	662
31	1030	---	1040	1500	---	2350	---	3000	---	852	578	---
TOTAL	22342	13597	34166	79719	184950	173030	73280	51020	157540	29709	25139	16360
MEAN	721	453	1102	2572	6605	5582	2443	1646	5251	958	811	545
MAX	5820	810	3400	12400	27500	13400	8730	3940	33600	1400	1500	959
MIN	257	371	494	966	2240	2350	1330	918	1100	717	570	440
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122

CAL YR 1981 TOTAL 424840 MEAN 1164 MAX 25400 MIN 257 MEAN‡ 1258 CFSM‡ .61 IN‡ 8.23
WTR YR 1982 TOTAL 860852 MEAN 2358 MAX 33600 MIN 257 MEAN‡ 2383 CFSM‡ 1.15 IN‡ 15.59

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1951-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to current year.
WATER TEMPERATURES: October 1947 to September 1948, May 1951 to September 1956, April 1968 to current year.
SUSPENDED-SEDIMENT DISCHARGE: May 1951 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 945 micromhos Sept. 27, 1954; minimum daily, 67 micromhos Oct. 20, 1975, Oct. 10, 1976.
WATER TEMPERATURES: Maximum daily, 31.0°C July 5, 1955, July 17, 21, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 817 micromhos Oct. 14; minimum daily, 79 micromhos Feb. 4, Mar. 21.
WATER TEMPERATURES: Maximum daily, 25.0°C June 28; minimum daily, 0.5°C Jan. 12, 13, 17, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT												
07...	1050	301	720	8.0	16.0	32	7.9	230	79	8.3	41	4.1
DEC												
02...	0915	564	530	8.0	4.0	48	--	180	60	6.1	27	3.3
JAN												
25...	1030	2850	184	7.7	.0	14	--	63	20	3.2	7.2	1.6
MAR												
30...	1030	2520	185	8.0	8.5	5	--	67	21	3.6	6.9	1.2
MAY												
14...	0945	1120	230	8.0	20.0	2	--	88	27	5.1	9.8	1.8
JUN												
23...	1400	1630	202	8.7	22.0	8	--	82	26	4.2	6.5	1.0
JUL												
19...	1345	1010	290	8.1	27.5	8	--	110	35	4.9	12	2.2
SEP												
07...	1145	481	375	8.3	22.0	23	--	140	44	6.9	17	3.0

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
07...	120	49	120	.1	3.1	470	377	<.010	.13	.680	33
DEC											
02...	99	40	75	.1	1.2	325	272	.010	.09	.170	77
JAN											
25...	36	18	16	<.1	4.9	112	93	.020	.31	.030	36
MAR											
30...	52	18	12	<.1	3.6	120	98	.010	.24	.060	28
MAY											
14...	68	17	12	<.1	2.6	130	116	.020	.20	.110	8
JUN											
23...	64	15	12	.1	3.5	119	107	<.010	<.10	.030	29
JUL											
19...	76	21	26	.1	3.5	191	150	<.010	.19	.180	17
SEP											
07...	97	29	33	.2	4.3	182	196	<.010	<.10	<.010	13

< Actual value is known to be less than the value shown.

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574	203	525	295	196	180	198	130	190	300	305	370
2	571	252	520	270	148	194	194	134	175	320	289	380
3	619	292	590	320	137	175	204	151	195	255	285	340
4	650	342	500	225	79	139	202	166	145	300	283	340
5	691	379	460	100	107	144	198	168	195	335	288	335
6	698	426	430	120	117	148	---	167	175	335	294	360
7	693	455	380	125	124	146	213	184	200	295	310	345
8	718	495	375	200	138	109	198	177	195	285	292	380
9	653	520	345	205	141	117	201	194	230	267	207	410
10	644	515	380	220	143	122	195	190	185	274	247	420
11	---	523	440	158	140	124	193	186	130	269	225	400
12	644	550	425	295	156	135	194	199	---	288	234	295
13	747	543	420	263	161	145	212	219	100	---	243	400
14	817	575	410	265	163	151	222	218	80	245	269	360
15	629	550	400	280	171	148	228	245	120	243	---	340
16	520	550	410	298	168	137	203	249	135	265	309	355
17	513	640	370	315	175	112	241	257	135	269	317	375
18	495	643	305	330	99	108	238	270	155	250	320	360
19	495	645	280	340	104	117	185	273	175	262	266	410
20	485	650	290	360	117	125	198	288	190	262	315	390
21	473	600	300	315	120	79	216	299	205	256	320	410
22	450	580	310	278	129	106	201	286	205	254	310	410
23	416	600	360	180	139	118	194	284	220	250	335	415
24	431	650	348	200	142	120	206	248	220	254	360	415
25	396	610	195	180	155	131	216	265	225	246	370	410
26	361	590	185	210	159	141	217	252	245	296	340	340
27	213	650	170	180	168	154	171	247	290	288	390	320
28	---	655	210	183	177	156	110	181	270	285	380	320
29	165	600	195	198	---	174	105	230	280	309	390	325
30	193	580	260	181	---	181	118	235	310	304	343	278
31	208	---	290	188	---	188	---	215	---	315	335	---
MEAN	523	529	357	235	142	139	196	220	192	279	306	367

WTR YR 1982 MEAN 290 MAX 817 MIN 79

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.5	13.5	4.5	3.0	5.0	6.0	13.0	14.5	22.5	23.5	20.0	13.0
2	16.5	14.0	5.0	3.0	8.0	7.0	14.0	15.5	22.0	22.5	19.5	14.5
3	17.0	15.0	4.0	3.0	4.0	6.5	14.5	16.0	21.5	23.0	19.5	15.0
4	17.0	15.0	6.0	5.0	5.0	6.0	13.5	17.0	20.0	22.0	20.0	16.0
5	19.0	15.0	5.5	5.0	5.5	7.5	11.5	18.5	20.5	21.0	20.5	17.0
6	19.0	13.5	5.0	5.0	5.5	7.0	---	19.5	19.0	23.0	20.5	17.5
7	18.0	12.0	6.0	5.5	4.0	6.0	9.0	19.5	20.5	24.0	20.0	18.0
8	17.5	12.0	5.0	5.5	4.5	6.0	7.5	19.0	22.0	23.5	18.5	17.0
9	16.5	11.0	4.5	4.0	5.0	7.0	7.5	19.5	23.5	23.5	17.5	14.5
10	14.5	10.5	3.0	1.0	4.5	6.5	9.5	20.0	22.0	24.5	18.0	13.0
11	---	10.0	2.5	1.0	5.0	8.0	10.0	20.0	21.0	22.5	18.0	13.0
12	14.5	10.0	3.0	.5	4.0	11.0	12.0	23.0	---	23.0	17.0	13.0
13	15.5	9.5	2.0	.5	4.5	12.0	14.0	22.0	16.5	---	16.5	13.0
14	15.5	9.0	2.5	1.0	5.0	10.0	16.5	22.5	16.5	22.0	16.5	14.5
15	15.5	9.5	2.5	1.0	6.0	9.0	16.0	23.0	16.5	23.0	---	15.0
16	17.0	9.0	3.0	1.0	7.0	7.0	16.0	23.0	18.0	23.5	18.0	15.5
17	17.0	9.0	3.0	.5	7.0	10.0	17.0	24.0	18.0	24.0	17.5	14.5
18	15.5	10.0	2.5	1.0	5.5	10.5	16.5	24.0	19.0	24.0	17.0	13.0
19	14.0	10.5	2.0	1.0	5.5	10.5	15.5	23.5	21.0	24.0	17.5	11.5
20	14.0	9.5	1.0	1.5	6.0	9.5	14.5	23.5	22.0	23.5	18.0	11.0
21	14.0	7.0	1.0	1.5	7.0	9.5	15.0	23.0	23.5	23.0	17.5	10.0
22	13.5	6.5	1.5	.5	6.5	9.5	14.0	23.0	21.0	22.5	16.0	9.5
23	12.5	7.0	3.0	1.0	8.0	10.0	15.0	22.5	22.0	22.5	15.5	8.5
24	10.0	5.5	4.5	1.5	9.0	10.0	15.5	23.0	22.0	21.0	16.5	8.0
25	11.0	5.5	4.0	1.0	8.5	11.0	15.5	24.0	23.0	22.0	16.5	8.0
26	13.0	6.0	4.0	1.0	7.0	10.0	16.5	24.0	22.5	23.0	16.0	6.0
27	14.0	7.0	4.5	1.0	4.5	8.5	15.5	23.0	24.0	22.5	14.5	8.0
28	---	6.5	4.5	2.0	5.0	9.0	18.5	23.0	25.0	22.5	14.0	8.0
29	14.0	6.0	4.0	3.0	---	9.0	14.0	23.5	24.0	21.5	14.0	8.0
30	12.0	5.0	4.0	3.0	---	10.5	14.5	24.5	24.0	19.5	13.0	8.5
31	13.0	---	2.0	5.0	---	11.0	---	23.0	---	19.0	12.0	---
MEAN	15.0	9.5	3.5	2.0	6.0	8.5	14.0	21.5	21.0	22.5	17.0	12.5

WTR YR 1982 MEAN 13.0 MAX 25.0 MIN .5

02020500 CALFPASTURE RIVER ABOVE MILL CREEK, AT GOSHEN, VA

LOCATION.--Lat 37°59'16", long 79°29'38", Rockbridge County, Hydrologic Unit 02080202, on left bank 20 ft (6 m) upstream from bridge on State Highway 42 at Goshen and 400 ft (122 m) upstream from Mill Creek.

DRAINAGE AREA.--144 mi^2 (373 km^2).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,384.84 ft (422.099 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 161 ft^3/s (4.560 m^3/s), 15.18 in/yr (386 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft^3/s (592 m^3/s) Oct. 6, 1972, gage height, 12.78 ft (3.895 m), from rating curve extended above 9,200 ft^3/s (260 m^3/s) on basis of slope-area measurement of peak flow; no flow Sept. 5, 6, 1957, Sept. 28, 1959, result of diversion.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s (71 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 3	2200	5090	144	7.82	2.384	June 10	1430	2950	83.5	6.37	1.942
Mar. 20	1900	5340	151	7.96	2.426	June 13	1630	*10900	309	10.66	3.249

Minimum discharge, 3.4 ft^3/s (0.10 m^3/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	74	29	96	1020	172	128	300	129	33	49	15
2	5.0	60	47	84	628	192	109	245	101	30	43	14
3	4.6	51	87	87	2710	237	117	201	77	28	36	12
4	4.1	44	95	1030	2330	233	169	160	219	42	32	10
5	4.1	40	89	1090	841	223	188	129	403	72	27	9.7
6	4.0	38	75	548	537	214	193	113	447	66	41	9.4
7	3.8	35	68	372	376	419	172	96	285	57	136	9.1
8	3.6	32	65	275	285	747	148	86	184	49	134	8.8
9	3.5	30	61	212	354	531	147	79	139	46	103	8.8
10	3.7	28	55	172	487	398	146	68	1590	44	78	8.8
11	4.0	26	48	130	383	325	130	64	1050	42	57	8.5
12	4.2	24	44	110	292	335	124	59	990	174	46	8.2
13	4.6	23	37	95	241	345	118	53	7060	110	38	7.9
14	4.6	21	46	85	197	325	110	49	2370	71	32	7.6
15	4.0	20	81	75	165	325	99	46	844	61	27	7.6
16	4.0	19	114	65	171	372	90	46	463	54	27	7.0
17	4.0	19	109	56	807	647	106	42	389	46	42	6.8
18	4.1	18	101	57	1470	677	195	40	256	89	158	6.6
19	4.2	18	91	57	698	494	167	40	192	232	125	6.8
20	4.4	19	72	52	572	2360	153	42	154	202	80	7.6
21	4.2	19	64	88	494	1900	140	42	121	138	55	8.8
22	4.2	18	83	177	425	913	122	40	99	91	43	13
23	4.8	18	113	125	356	572	107	56	82	71	35	11
24	5.2	20	325	123	300	402	96	53	68	74	30	9.4
25	5.2	21	291	97	258	307	86	56	58	80	27	8.8
26	7.8	19	224	96	219	282	228	125	53	61	22	12
27	804	19	180	89	205	227	653	93	49	49	20	21
28	638	21	148	89	192	192	659	86	43	41	19	15
29	260	22	123	105	---	166	494	75	38	35	17	11
30	145	23	100	99	---	147	372	110	37	43	15	11
31	99	---	94	154	---	136	---	132	---	49	15	---
TOTAL	2060.1	839	3159	5990	17013	14815	5766	2826	17990	2280	1609	301.2
MEAN	66.5	28.0	102	193	608	478	192	91.2	600	73.5	51.9	10.0
MAX	804	74	325	1090	2710	2360	659	300	7060	232	158	21
MIN	3.5	18	29	52	165	136	86	40	37	28	15	6.6
CFSM	.46	.19	.71	1.34	4.22	3.32	1.33	.63	4.17	.51	.36	.07
IN.	.53	.22	.82	1.55	4.39	3.83	1.49	.73	4.65	.59	.42	.08

CAL YR 1981 TOTAL 30309.7 MEAN 83.0 MAX 1310 MIN 3.0 CFSM .58 IN 7.83
WTR YR 1982 TOTAL 74648.3 MEAN 205 MAX 7060 MIN 3.5 CFSM 1.42 IN 19.28

02021500 MAURY RIVER AT ROCKBRIDGE BATHS, VA

LOCATION.--Lat 37°54'26", long 79°25'20", Rockbridge County, Hydrologic Unit 02080202, on right bank at Rockbridge Baths, 1,200 ft (370 m) upstream from bridge on State Highway 39, and 1.0 mi (1.6 km) upstream from Hays Creek.

DRAINAGE AREA.--329 mi² (852 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River at Rockbridge Baths.

REVISED RECORDS.--WSP 972: 1929-40, 1941(M). WSP 1002: 1930(m). WSP 1553: 1931(m).

GAGE.--Water-stage recorder. Datum of gage is 1,100.33 ft (335.381 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calfpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 371 ft³/s (10.51 m³/s), 15.31 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Mar. 17, 1936, gage height, 13.07 ft (3.984 m), from rating curve extended above 16,000 ft³/s (450 m³/s); minimum, 5.8 ft³/s (0.16 m³/s) Sept. 10, 1966, gage height, 0.79 ft (0.241 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2200	8870	251	8.29	2.527	June 10	1600	6450	183	7.38	2.249
Mar. 20	2100	7060	200	7.64	2.329	June 13	1700	*18400	521	10.68	3.255

Minimum discharge, 20 ft³/s (0.57 m³/s) Oct. 7-10, gage height, 1.03 ft (0.314 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	209	67	208	2310	399	440	551	556	99	120	59
2	25	168	124	206	1550	484	383	471	326	88	98	59
3	25	143	177	223	5050	652	371	394	230	83	85	57
4	24	124	190	1810	5180	594	490	317	386	85	79	53
5	23	118	178	2300	2300	555	488	286	727	120	77	52
6	22	136	155	1250	1530	527	485	256	860	121	172	51
7	21	114	139	853	1050	1210	414	233	575	105	334	50
8	20	99	132	641	796	2040	348	218	396	93	247	49
9	20	98	123	502	905	1420	348	203	342	86	240	49
10	21	119	112	316	1130	1050	354	183	3320	87	174	49
11	22	128	105	255	885	842	320	168	2870	81	134	49
12	26	113	98	268	697	858	305	156	2390	193	111	48
13	64	109	88	255	607	836	295	146	13600	178	97	48
14	78	117	98	229	513	762	283	138	5630	124	89	52
15	85	87	233	212	451	766	261	130	2100	105	83	52
16	81	74	359	194	503	960	241	123	1290	101	79	50
17	76	77	300	160	1790	1580	246	116	1060	121	104	49
18	55	96	255	168	3230	1500	651	109	780	150	174	49
19	50	82	204	166	1870	1140	557	108	583	278	189	49
20	75	79	175	145	1540	3690	438	115	450	303	137	51
21	73	60	157	291	1280	3970	354	109	346	212	110	51
22	56	52	189	633	1030	2390	308	105	275	156	94	61
23	76	48	295	462	815	1590	274	117	227	124	84	60
24	59	55	819	463	690	1140	250	119	191	111	78	54
25	51	56	695	382	583	888	232	119	165	124	73	52
26	52	53	523	364	482	886	554	160	146	106	70	60
27	1540	53	424	245	452	703	1140	164	143	90	66	113
28	1820	57	346	257	434	584	1220	148	127	83	66	113
29	734	58	286	250	---	511	893	143	114	80	63	89
30	412	57	230	230	---	475	683	202	109	108	60	91
31	281	---	195	392	---	462	---	323	---	131	59	---
TOTAL	5989	2839	7471	14330	39653	35464	13626	6130	40314	3926	3646	1769
MEAN	193	94.6	241	462	1416	1144	454	198	1344	127	118	59.0
MAX	1820	209	819	2300	5180	3970	1220	551	13600	303	334	113
MIN	20	48	67	145	434	399	232	105	109	80	59	48
CFSM	.59	.29	.73	1.40	4.30	3.48	1.38	.60	4.09	.39	.36	.18
IN.	.68	.32	.84	1.62	4.48	4.01	1.54	.69	4.56	.44	.41	.20

CAL YR 1981 TOTAL 68384 MEAN 187 MAX 2590 MIN 19 CFSM .57 IN 7.73
WTR YR 1982 TOTAL 175157 MEAN 480 MAX 13600 MIN 20 CFSM 1.46 IN 19.80

02022500 KERRS CREEK NEAR LEXINGTON, VA

LOCATION.--Lat 37°49'32", long 79°26'36", Rockbridge County, Hydrologic Unit 02080202, on right bank 100 ft (30 m) upstream from bridge on Interstate Highway 64, 1.4 mi (2.3 km) upstream from mouth, and 2.9 mi (4.7 km) north of Lexington.

DRAINAGE AREA.--35.0 mi² (90.6 km²).

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1203: 1927-29, 1930-34(M), 1935-40, 1941(M), 1942, 1943-48(M), 1949. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 980.32 ft (298.802 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 27, 1927, to Sept. 30, 1953, nonrecording gage at site 1,000 ft (305 m) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 35.3 ft³/s (1.000 m³/s), 13.70 in/yr (348 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s (651 m³/s) Sept. 10, 1950, gage height, 13.8 ft (4.21 m), from floodmarks, site and datum then in use, from rating curve extended above 800 ft³/s (23 m³/s) on basis of contracted-opening and slope-area measurements of peak flow; minimum, 0.90 ft³/s (0.025 m³/s) July 22, 1966 (result of temporary dam upstream); minimum daily, 4.0 ft³/s (0.11 m³/s) many days in August and September 1932, Nov. 21, 1938, July 22, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	1400	1240	35.1	6.02	1.835	June 13	0615	*2620	74.2	7.39	2.252
June 12	2200	2090	59.2	6.94	2.115						

Minimum discharge, 4.4 ft³/s (0.12 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	11	9.5	16	134	29	37	39	13	16	10	8.2
2	5.4	9.9	15	16	63	45	34	35	12	15	8.9	8.2
3	5.0	9.3	12	25	570	60	39	31	12	15	8.4	7.2
4	4.8	8.7	11	116	210	49	33	28	23	16	7.9	6.7
5	5.0	8.3	9.7	62	104	44	32	26	39	16	14	6.7
6	5.0	8.0	8.7	38	73	48	33	24	25	14	21	6.7
7	4.8	7.2	8.3	30	53	162	30	23	20	13	14	6.4
8	4.6	7.2	8.4	25	43	121	29	22	17	23	24	6.2
9	4.7	7.2	7.6	22	43	90	32	21	18	17	21	6.2
10	5.0	7.1	7.1	17	36	73	30	19	107	14	15	6.4
11	5.2	6.9	7.2	16	31	63	28	18	69	14	13	6.4
12	5.2	6.9	7.3	16	28	63	28	17	371	15	12	6.2
13	5.1	6.7	7.0	15	28	57	27	17	1160	13	11	6.2
14	5.0	6.7	9.6	14	26	52	26	16	217	13	10	6.2
15	5.1	6.7	21	13	25	66	25	15	112	13	9.8	6.2
16	5.1	6.6	25	12	40	93	24	15	81	13	9.5	5.8
17	5.0	6.6	19	11	186	98	27	15	64	12	9.2	5.6
18	5.1	6.4	16	12	144	78	33	13	52	13	8.9	5.8
19	5.1	6.3	12	12	97	69	29	13	43	13	8.4	5.8
20	4.9	7.0	11	12	81	272	28	13	36	11	8.4	6.4
21	5.0	6.6	9.2	26	65	172	26	13	33	10	8.2	6.7
22	5.1	6.2	14	26	51	112	25	12	30	10	7.6	8.9
23	6.0	6.2	37	22	43	88	24	14	28	10	7.9	7.4
24	5.9	8.0	41	21	38	73	23	13	25	10	7.9	6.7
25	5.6	7.7	30	21	33	65	23	13	24	9.2	7.4	6.7
26	10	7.4	25	17	30	66	76	12	22	8.9	7.2	12
27	159	7.5	22	16	31	54	68	16	21	8.7	7.6	15
28	35	8.6	19	16	29	48	60	13	20	8.9	8.2	9.2
29	21	7.6	17	16	---	44	50	13	19	9.5	7.2	8.7
30	16	7.2	14	18	---	42	43	19	19	12	7.2	8.4
31	13	---	14	99	---	41	---	14	---	12	7.9	---
TOTAL	381.5	223.7	474.6	798	2335	2437	1022	572	2732	398.2	328.7	219.2
MEAN	12.3	7.46	15.3	25.7	83.4	78.6	34.1	18.5	91.1	12.8	10.6	7.31
MAX	159	11	41	116	570	272	76	39	1160	23	24	15
MIN	4.6	6.2	7.0	11	25	29	23	12	12	8.7	7.2	5.6
CFSM	.35	.21	.44	.73	2.38	2.25	.97	.53	2.60	.37	.30	.21
IN.	.41	.24	.50	.85	2.48	2.59	1.09	.61	2.90	.42	.35	.23

CAL YR 1981 TOTAL 5075.3 MEAN 13.9 MAX 171 MIN 4.6 CFSM .40 IN 5.39
WTR YR 1982 TOTAL 11921.9 MEAN 32.7 MAX 1160 MIN 4.6 CFSM .93 IN 12.67

02024000 MAURY RIVER NEAR BUENA VISTA, VA

LOCATION.--Lat 37°45'45", long 79°23'30", Rockbridge County, Hydrologic Unit 02080202, on right bank 0.5 mi (0.8 km) downstream from South River and 2.8 mi (4.5 km) northwest of Buena Vista.

DRAINAGE AREA.--646 mi^2 (1,673 km^2).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River near Buena Vista.

REVISED RECORDS.--WSP 952: 1940-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 846.58 ft (258.038 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calfpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 655 ft^3/s (18.55 m^3/s), 13.77 in/yr (350 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft^3/s (2,970 m^3/s) Aug. 20, 1969, gage height, 31.23 ft (9.159 m), from floodmarks, from rating curve extended above 17,000 ft^3/s (480 m^3/s) on basis of slope-area measurement of peak flow; minimum, 20 ft^3/s (0.57 m^3/s) Oct. 10, 1941, occurred during filling of a small reservoir 2 mi (3 km) upstream; unqualified minimum, 37 ft^3/s (1.05 m^3/s) Sept. 9, 1966; minimum gage height, 0.98 ft (0.299 m) Jan. 5, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of about 22 ft (6.7 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,200 ft^3/s (180 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
Feb. 3	2400	10200	289	10.24	3.121	June 10	2000	6820	193	8.26	2.518
Mar. 21	0130	7760	220	8.85	2.697	June 13	1830	*19400	549	14.55	4.435

Minimum discharge, 68 ft^3/s (1.93 m^3/s) Oct. 8, 9, gage height, 1.08 ft (0.329 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	352	137	397	2920	685	798	795	792	332	308	166
2	79	300	189	403	2070	732	721	699	532	304	251	168
3	80	266	248	430	5340	965	676	624	410	290	223	161
4	78	239	281	1480	7180	935	769	533	596	313	206	149
5	79	219	275	2980	3220	873	748	485	932	696	199	143
6	77	228	255	1700	2150	842	754	453	1200	421	299	139
7	74	214	231	1210	1580	1480	684	424	880	344	462	137
8	72	195	218	935	1240	2780	613	403	647	361	509	134
9	72	180	208	752	1160	2070	598	381	608	349	659	133
10	73	194	193	529	1450	1630	601	353	3160	329	409	133
11	75	210	176	447	1220	1360	559	331	4190	292	324	135
12	77	196	179	498	1000	1300	532	315	2850	302	348	132
13	91	194	168	502	884	1250	516	302	16400	402	279	130
14	135	194	179	457	784	1160	504	289	9060	321	251	130
15	148	180	306	446	700	1120	475	275	3480	295	236	133
16	149	155	538	399	736	1330	451	270	2360	336	223	129
17	145	144	488	355	1840	1870	442	259	1850	278	266	124
18	131	161	414	317	4240	1910	742	247	1470	360	265	119
19	111	159	343	332	2610	1600	759	237	1140	380	354	119
20	114	158	315	297	2150	3720	664	260	937	490	287	127
21	141	145	300	417	1840	5610	557	262	782	395	249	133
22	128	126	317	933	1540	3410	508	249	674	326	223	144
23	132	116	407	705	1270	2360	467	272	590	288	209	148
24	148	131	973	663	1090	1800	439	273	524	281	198	135
25	123	139	982	599	949	1460	419	251	476	265	189	130
26	141	129	771	555	814	1490	622	277	441	255	176	177
27	1340	126	630	437	761	1220	1220	329	420	233	171	308
28	2460	130	540	437	741	1060	1480	301	394	222	175	240
29	1070	131	463	440	---	937	1190	283	366	216	166	203
30	622	127	398	401	---	860	949	359	353	234	158	171
31	448	---	348	755	---	828	---	384	---	327	163	---
TOTAL	8686	5438	11470	21208	53479	50647	20457	11175	58514	10237	8435	4530
MEAN	280	181	370	684	1910	1634	682	360	1950	330	272	151
MAX	2460	352	982	2980	7180	5610	1480	795	16400	696	659	308
MIN	72	116	137	297	700	685	419	237	353	216	158	119
CFSM	.43	.28	.57	1.06	2.96	2.53	1.06	.56	3.02	.51	.42	.23
IN.	.50	.31	.66	1.22	3.08	2.92	1.18	.64	3.37	.59	.49	.26

CAL YR 1981 TOTAL 109481 MEAN 300 MAX 2590 MIN 57 CFSM .46 IN 6.30
WTR YR 1982 TOTAL 264276 MEAN 724 MAX 16400 MIN 72 CFSM 1.12 IN 15.22

02025500 JAMES RIVER AT HOLCOMBS ROCK, VA

LOCATION.--Lat 37°30'04", long 79°15'46", Bedford County, Hydrologic Unit 02080203, on right bank at Holcombs Rock, 0.9 mi (1.4 km) downstream from Pedlar River, and at mile 268.6 (432.2 km).

DRAINAGE AREA.--3,259 mi² (8,441 km²).

PERIOD OF RECORD.--January 1900 to September 1915 (gage heights only), October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Published as "at Salt Creek" December 1926 to June 1931.

REVISED RECORDS.--WSP 972: 1913(M), 1932-33, 1935(M), 1936. WSP 1303: 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 548.53 ft (167.192 m) National Geodetic Vertical Datum of 1929. January 1900 to September 1915, nonrecording gage in powerhouse of Owens Illinois Glass Company 1,000 ft (305 m) upstream at different datum. December 1926 to June 1931, water-stage recorder at site 2 mi (3.2 km) downstream at different datum.

REMARKS.--Records good. Some diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 117.5 mi (189 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 3,574 ft³/s (101.2 m³/s), 14.89 in/yr (378 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD. -Maximum discharge, 150,000 ft³/s (4,250 m³/s) Aug. 20, 1969, gage height, 35.50 ft (10.820 m), from rating curve extended above 73,000 ft³/s (2,100 m³/s) on basis of records for other stations in James River basin; minimum, 71 ft³/s (2.01 m³/s) Oct. 24, 1963; minimum daily, 223 ft³/s (6.32 m³/s) July 28, 1930; minimum gage height, 2.91 ft (0.887 m) Oct. 5, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 31.3 ft (9.54 m), from floodmarks, discharge, 118,000 ft³/s (3,340 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25,000 ft³/s (710 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	0815	42900	1210	18.86	5.749	June 13	2315	*67900	1920	23.67	7.215

Minimum discharge, 122 ft³/s (3.46 m³/s) Oct. 2, gage height, 3.15 ft (0.960 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	477	1520	832	2120	5650	3410	3400	5350	3880	1790	1430	891
2	280	1360	911	2040	9050	3410	3020	4310	3600	1730	1390	920
3	422	1220	1020	2130	15100	4410	3070	3850	3030	1580	1310	891
4	453	1070	1280	4220	38900	5440	3070	3420	3460	1610	1230	837
5	461	1040	1280	16200	21700	5030	3070	3100	3830	1920	1080	810
6	467	997	1300	10300	13900	4680	3060	2780	4490	1920	1180	792
7	474	934	1090	6290	9230	5390	3080	2570	3980	1650	1580	756
8	523	871	1090	5180	7230	13000	2970	2370	3230	1570	1860	720
9	469	788	1070	4330	5860	11800	2980	2340	3200	1520	2380	756
10	475	809	999	3340	5290	9350	2960	2120	5080	1610	2060	683
11	487	815	977	2690	5570	7140	2800	1990	11700	1500	1750	771
12	487	802	836	2240	5160	5950	2500	1880	9450	1780	1550	696
13	775	797	871	2280	4860	5600	2400	1790	45200	1860	1340	718
14	745	795	875	2240	4090	5230	2280	1730	51700	2010	1290	746
15	747	777	1160	2230	3760	5100	2300	1660	22600	1740	1200	704
16	759	725	1930	2160	3260	7690	2260	1590	14800	1520	1130	750
17	766	760	2430	1820	4980	12200	2290	1520	11300	1570	1110	713
18	765	666	2050	1530	18100	12100	2450	1510	7870	1500	1450	699
19	809	708	1780	1760	17300	9860	3080	1440	5440	1740	1390	695
20	806	743	1430	1750	12700	9740	2950	1430	4190	1700	1240	704
21	682	704	1120	1900	9590	21000	2840	1540	3630	1700	1170	793
22	733	700	1280	3010	7500	18100	2730	1510	3160	1590	1090	766
23	755	692	1590	4490	6520	13500	2440	1500	2770	1460	1000	843
24	531	705	3250	3840	5500	10500	2210	1750	2480	1490	998	898
25	596	773	4690	3710	4690	7930	2140	1700	2350	1360	950	875
26	660	779	3680	3410	4160	6300	2550	1860	2200	1310	846	947
27	2200	783	2950	2980	3730	5620	5240	2720	2070	1330	920	1440
28	8130	769	2520	2440	3590	4620	9590	2840	1950	1170	980	1480
29	4950	776	2210	2380	---	4150	9470	2330	1870	1150	920	1340
30	2790	783	1960	2340	---	3810	6720	2580	1770	1190	910	1070
31	1990	---	1790	2320	---	3520	---	3190	---	1230	864	---
TOTAL	35664	25661	52251	109670	256970	245580	101920	72270	246280	48800	39598	25704
MEAN	1150	855	1686	3538	9178	7922	3397	2331	8209	1574	1277	857
MAX	8130	1520	4690	16200	38900	21000	9590	5350	51700	2010	2380	1480
MIN	280	666	832	1530	3260	3410	2140	1430	1770	1150	846	683
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122
MEAN‡	1272	899	1975	3777	9123	7922	3400	2336	8162	1505	1151	735
CFSM‡	.39	.28	.61	1.16	2.80	2.43	1.04	.72	2.50	.46	.35	.23
IN‡	.45	.31	.70	1.34	2.92	2.80	1.16	.83	2.79	.53	.40	.26

CAL YR 1981 TOTAL 619666 MEAN 1698 MAX 26200 MIN 244 MEAN‡ 1792 CFSM‡ .55 IN‡ 7.47
WTR YR 1982 TOTAL 1260368 MEAN 3453 MAX 51700 MIN 280 MEAN‡ 3478 CFSM‡ 1.07 IN‡ 14.52

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

02026000 JAMES RIVER AT BENT CREEK, VA

LOCATION.--Lat 37°32'10", long 78°49'30", Nelson County, Hydrologic Unit 02080203, on left bank at town of Bent Creek, 150 ft (46 m) downstream from Bent Creek, 525 ft (160 m) upstream from bridge on U.S. Highway 60, 1.3 mi (2.1 km) southeast of Gladstone, and at mile 227.8 (366.5 km).

DRAINAGE AREA.--3,683 mi^2 (9,539 km^2).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to 1926, published as "at Bent Creek, near Gladstone."

REVISED RECORDS.--WSP 742: 1931(m). WSP 972: 1935-36. WSP 1066: 1940. WSP 1203: 1942. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 381.39 ft (116.248 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 12, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 158.3 mi (254.7 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 4,174 ft^3/s (118.2 m^3/s), 15.39 in/yr (391 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft^3/s (4,980 m^3/s) June 21, 1972, gage height, 27.13 ft (8.269 m), from high-water mark in gage house, from rating curve extended above 89,000 ft^3/s (2,500 m^3/s) on basis of velocity-area studies and records for other stations in James River basin; minimum, 222 ft^3/s (6.29 m^3/s) Oct. 13, 14, 1930, gage height, 2.21 ft (0.674 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 26,500 ft^3/s (750 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 4	1345	44100	1250	13.32	4.060	June 14	0915	*69500	1970	16.75	5.105

Minimum discharge, 483 ft^3/s (13.7 m^3/s) Oct. 3, 4, 5, 8, 9, gage height, 2.48 ft (0.756 m); minimum daily, 494 ft^3/s (14.0 m^3/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	587	1890	913	2770	5180	4260	4230	6670	4360	2130	1370	661
2	506	1550	999	2670	9720	4190	4020	5580	4660	1980	1670	1370
3	506	1370	1070	3180	15200	4790	3610	4970	4040	2000	1540	763
4	494	1340	1190	5960	39100	6240	3710	4330	8420	1960	1290	1370
5	494	1120	1480	13400	26200	6410	3970	3940	8240	4810	1480	636
6	517	1060	1370	13600	16100	6160	3900	3450	5990	2840	1320	956
7	624	1120	1320	8210	10900	6500	3570	3180	5360	2170	1820	927
8	517	1120	1210	6590	8680	12100	3550	2550	4360	1920	1800	927
9	661	899	1240	5610	7470	13500	3920	2550	4160	2370	2750	790
10	624	844	1130	4680	6130	11000	3230	2840	6610	2150	2710	1010
11	552	999	1100	3850	6590	9190	3640	2510	13100	1760	2230	763
12	686	858	1070	2770	6100	7260	3320	2170	12100	1870	2990	984
13	661	790	927	2510	6050	6820	2860	1940	29100	2390	2090	711
14	844	899	970	2970	5470	6470	2800	1830	61900	2510	1470	885
15	817	970	1540	3140	4810	6210	2430	1710	28900	2190	1430	913
16	763	790	3050	2430	4310	7290	2710	1820	16300	2210	1290	885
17	899	673	2840	2690	4710	12000	2550	1850	12800	1780	1550	763
18	844	871	2750	2170	13600	13200	2770	1780	9980	1500	2020	858
19	817	817	2130	2060	19400	11400	3570	1710	7230	1760	1620	750
20	956	790	1870	2450	14200	10200	3610	1780	5660	1920	1870	871
21	858	927	1620	2270	11200	17300	3480	1690	4860	1890	1320	858
22	737	885	1270	2670	9060	20300	3570	1890	4040	1920	1090	913
23	817	844	1600	5070	7710	14800	3030	1890	3610	1980	1300	899
24	956	737	2490	5470	6990	12100	2530	1740	3010	2430	1340	899
25	699	858	5390	4710	5910	9880	2470	2170	2820	1600	970	999
26	830	942	5390	4510	5390	7710	3320	1830	2710	1520	1070	1010
27	3050	885	3920	4110	4940	7020	4660	2410	2310	1830	1090	1670
28	6470	844	3320	3520	4710	5990	9130	4210	2450	1390	1240	1660
29	7830	970	2770	2900	---	5420	11300	3030	2150	1480	1100	1620
30	4230	885	2370	2800	---	4970	8300	3010	2090	1070	1350	1320
31	2690	---	2470	2570	---	4660	---	3410	---	1850	1060	---
TOTAL	42536	29547	62779	134310	285830	275340	119760	86440	283320	63180	49240	29641
MEAN	1372	985	2025	4333	10210	8882	3992	2788	9444	2038	1588	988
MAX	7830	1890	5390	13600	39100	20300	11300	6670	61900	4810	2990	1670
MIN	494	673	913	2060	4310	4190	2430	1690	2090	1070	970	636
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122

CAL YR 1981 TOTAL 698016 MEAN 1912 MAX 20700 MIN 467 MEAN‡ 2006 CFSM‡ .54 IN‡ 7.40
WTR YR 1982 TOTAL 1461923 MEAN 4005 MAX 61900 MIN 494 MEAN‡ 4030 CFSM‡ 1.09 IN‡ 14.86

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02027000 TYE RIVER NEAR LOVINGSTON, VA

LOCATION.--Lat 37°42'55", long 78°58'55", Nelson County, Hydrologic Unit 02080203, on right bank at downstream side of bridge on State Highway 158, 3.5 mi (5.6 km) downstream from Hat Creek, 4.8 mi (7.7 km) upstream from Piney River, and 6.8 mi (10.9 km) southwest of Lovingston.

DRAINAGE AREA.--92.8 mi² (240.4 km²).

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 578.39 ft (176.293 m) National Geodetic Vertical Datum of 1929. Sept. 15, 1969, to Oct. 15, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good above 40 ft³/s (1.13 m³/s) and fair below.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 154 ft³/s (4.361 m³/s), 22.54 in/yr (573 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s (2,270 m³/s) Aug. 20, 1969, gage height, 29.0 ft (8.84 m), from floodmarks, from rating curve extended above 7,600 ft³/s (220 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.50 ft³/s (0.014 m³/s) Sept. 10, 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,350 ft³/s (66.6 m³/s) at 0745 hours June 13, gage height, 5.94 ft (1.811 m), no other peak above base of 1,600 ft³/s (45 m³/s); minimum daily, 14 ft³/s (0.40 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	119	48	235	445	168	163	211	116	95	57	27
2	34	108	64	209	302	170	145	197	101	83	51	28
3	32	97	57	209	668	175	226	182	95	81	49	30
4	32	87	51	334	664	161	238	170	132	114	48	28
5	26	106	55	338	499	158	206	158	258	161	49	26
6	26	104	49	290	391	156	204	149	202	99	79	25
7	25	77	49	250	312	233	187	143	163	83	83	24
8	23	71	48	209	269	238	180	138	143	77	73	22
9	23	66	46	187	258	216	185	130	138	108	66	21
10	21	62	46	141	221	204	170	121	341	116	58	20
11	23	58	44	121	192	194	156	112	341	97	51	20
12	21	57	42	110	178	194	147	106	309	79	67	19
13	21	55	42	105	170	185	143	99	1590	67	51	18
14	21	53	53	100	158	175	138	95	916	67	49	17
15	21	51	138	92	149	180	132	89	584	145	49	17
16	21	51	145	88	168	192	127	85	438	127	49	19
17	20	51	112	85	373	197	141	81	355	83	55	17
18	20	49	104	81	481	185	149	77	293	71	58	16
19	25	48	78	80	438	185	132	73	250	75	46	14
20	21	48	60	85	398	427	130	77	214	73	37	16
21	20	44	70	110	355	402	127	104	190	64	35	17
22	20	42	99	98	309	369	121	163	175	58	33	19
23	25	40	158	86	274	318	116	168	158	89	32	21
24	39	48	168	80	245	283	114	106	143	77	30	17
25	32	46	156	76	209	252	112	95	136	60	28	18
26	37	44	143	74	187	263	250	87	132	57	27	20
27	640	48	134	71	185	209	274	108	123	57	25	95
28	322	49	125	108	175	192	274	152	112	57	29	40
29	204	44	116	89	---	185	250	114	108	55	27	39
30	161	42	104	75	---	175	226	114	104	57	26	25
31	136	---	108	149	---	170	---	101	---	60	25	---
TOTAL	2124	1865	2712	4365	8673	6811	5163	3805	8360	2592	1442	735
MEAN	68.5	62.2	87.5	141	310	220	172	123	279	83.6	46.5	24.5
MAX	640	119	168	338	668	427	274	211	1590	161	83	95
MIN	20	40	42	71	149	156	112	73	95	55	25	14
CFSM	.74	.67	.94	1.52	3.34	2.37	1.85	1.33	3.01	.90	.50	.26
IN.	.85	.75	1.09	1.75	3.48	2.73	2.07	1.53	3.35	1.04	.58	.29

CAL YR 1981 TOTAL 30247 MEAN 82.9 MAX 687 MIN 12 CFSM .89 IN 12.12
WTR YR 1982 TOTAL 48647 MEAN 133 MAX 1590 MIN 14 CFSM 1.43 IN 19.50

02027500 PINEY RIVER AT PINEY RIVER, VA

LOCATION.--Lat 37°42'08", long 79°01'40", Nelson County, Hydrologic Unit 02080203, on left bank at upstream side of bridge on State Highway 151, 0.2 mi (0.3 km) southwest of Piney River Post Office, 1.7 mi (2.7 km) downstream from Indian Creek, and 2.5 mi (4.0 km) southeast of Lowesville.

DRAINAGE AREA.--47.6 mi² (123.3 km²).

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 633.58 ft (193.115 m) National Geodetic Vertical Datum of 1929. Prior to May 27, 1969, water-stage recorder, and Nov. 4, 1969, to Feb. 26, 1970, nonrecording gage at site 20 ft (6 m) downstream from former highway bridge at same datum. Feb. 26, 1970, to Sept. 20, 1973, on right bank 20 ft (6 m) upstream from bridge at same datum.

REMARKS.--Records good except those for period of no gage-height record, June 11 to Sept. 30, which are fair. Periodic dewatering of upstream quarries adds small amount of inflow. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 93.7 ft³/s (2.654 m³/s), 26.73 in/yr (679 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s (1,080 m³/s) Aug. 20, 1969, gage height, 13.8 ft (4.21 m), from floodmarks, from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 1.1 ft³/s (0.031 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1949 reached a stage of 9.9 ft (3.02 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) time unknown June 13, gage height, 4.60 ft (1.402 m), from high-water mark in well, no other peak above base of 650 ft³/s (18 m³/s); minimum daily, 9.4 ft³/s (0.27 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	99	32	155	178	115	105	146	47	60	44	18
2	18	87	38	142	162	115	97	135	43	66	39	20
3	16	78	33	138	320	115	125	125	43	50	33	23
4	15	70	33	220	356	108	130	115	49	60	29	21
5	15	72	34	200	299	106	130	106	96	80	25	20
6	15	63	33	195	253	106	132	99	70	60	40	19
7	15	56	33	178	209	137	125	93	64	48	52	18
8	14	53	34	158	180	142	120	90	64	37	48	17
9	14	49	33	142	168	142	120	84	85	30	45	16
10	14	47	32	110	147	142	110	78	211	45	40	15
11	15	44	31	98	133	137	103	73	180	38	33	14
12	14	42	32	88	122	135	97	69	150	33	43	14
13	14	39	32	75	115	128	93	66	800	29	34	13
14	14	38	37	65	105	120	90	62	670	39	27	12
15	14	37	75	60	99	123	84	60	500	58	21	12
16	13	35	75	54	111	130	81	57	350	70	18	11
17	13	35	64	53	211	132	93	53	280	50	19	10
18	14	33	63	54	310	130	94	52	230	27	32	9.8
19	15	32	60	58	292	133	88	49	200	28	30	9.4
20	14	33	50	62	266	242	90	52	175	30	28	10
21	14	31	60	69	240	250	88	52	150	28	25	11
22	14	30	69	60	211	237	85	60	130	26	23	12
23	17	29	87	52	187	215	82	57	120	24	21	13
24	21	32	91	50	168	193	79	52	110	60	19	12
25	16	31	96	49	151	174	76	48	100	40	18	11
26	37	30	100	52	137	168	146	48	90	38	17	10
27	323	32	94	54	133	146	168	66	80	37	16	54
28	247	32	86	75	123	133	174	81	75	35	19	35
29	168	29	80	56	---	123	168	59	70	40	18	25
30	135	28	80	55	---	116	156	57	65	42	17	11
31	113	---	78	84	---	111	---	50	---	43	16	---
TOTAL	1396	1346	1775	2961	5386	4504	3329	2294	5297	1351	889	496.2
MEAN	45.0	44.9	57.3	95.5	192	145	111	74.0	177	43.6	28.7	16.5
MAX	323	99	100	220	356	250	174	146	800	80	52	54
MIN	13	28	31	49	99	106	76	48	43	24	16	9.4
CFSM	.95	.94	1.20	2.01	4.03	3.05	2.33	1.56	3.72	.92	.60	.35
IN.	1.09	1.05	1.39	2.31	4.21	3.52	2.60	1.79	4.14	1.06	.69	.39

CAL YR 1981 TOTAL 17735.4 MEAN 48.6 MAX 323 MIN 6.0 CFSM 1.02 IN 13.86
WTR YR 1982 TOTAL 31024.2 MEAN 85.0 MAX 800 MIN 9.4 CFSM 1.79 IN 24.25

02027800 BUFFALO RIVER NEAR TYE RIVER, VA

LOCATION.--Lat 37°36'20", long 78°55'25", Nelson County, Hydrologic Unit 02080203, on right bank 35 ft (11 m) upstream from bridge on State Highway 657, 2.1 mi (3.4 km) upstream from mouth, and 3.5 mi (5.6 km) southeast of town of Tye River.

DRAINAGE AREA.--147 mi^2 (381 km^2).

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 444.39 ft (135.450 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 169 ft^3/s (4.786 m^3/s), 15.61 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft^3/s (1,270 m^3/s) Aug. 20, 1969, gage height, 27.95 ft (8.519 m), from floodmark, from rating curve extended above 1,800 ft^3/s (51 m^3/s) on basis of computation of flow over dam at gage height 11.03 ft (3.362 m) and slope-area measurement at gage height 27.95 ft (8.519 m); minimum, 3.2 ft^3/s (0.091 m^3/s) Sept. 8-13, 1966; minimum gage height, 0.28 ft (0.085 m) Sept. 9-13, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft^3/s (40 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 3	1630	2520	71.4	7.75	2.362	June 13	1345	*3820	108	9.02	2.749
June 10	1315	2930	83.0	8.13	2.478						

Minimum discharge, 29 ft^3/s (0.82 m^3/s) Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	122	45	220	646	155	191	180	100	143	85	57
2	34	109	57	168	368	165	174	174	97	136	75	59
3	34	99	55	170	1410	229	198	167	94	134	70	56
4	32	91	50	498	949	205	211	154	145	165	67	52
5	32	85	49	363	622	192	180	145	273	279	68	51
6	31	121	47	249	465	198	187	141	178	180	71	51
7	32	88	46	200	365	370	169	136	123	152	75	51
8	31	75	45	165	297	511	167	130	109	130	71	50
9	30	70	43	141	275	349	180	127	114	134	80	51
10	29	68	42	114	250	297	171	116	848	191	81	51
11	31	63	43	130	207	273	163	114	490	160	69	51
12	32	59	47	120	185	253	156	110	268	120	70	49
13	31	57	48	115	180	233	154	107	1590	105	69	49
14	31	56	53	110	170	218	152	103	807	90	64	48
15	31	54	162	108	160	222	147	100	472	95	63	49
16	31	53	269	106	169	308	143	98	357	121	63	49
17	31	52	134	105	351	362	147	97	337	94	69	47
18	31	49	105	106	506	284	169	98	323	85	132	46
19	31	48	80	110	438	257	147	92	255	85	91	46
20	33	46	70	120	391	414	145	95	222	112	70	48
21	32	46	90	130	322	417	149	112	202	87	64	50
22	32	44	115	150	264	339	143	98	189	75	61	52
23	33	44	131	130	222	297	138	130	182	185	60	54
24	41	46	123	120	198	270	136	103	176	374	62	49
25	40	52	114	115	180	251	132	100	174	123	59	49
26	51	49	116	110	160	268	275	95	160	94	56	54
27	562	48	101	132	163	231	295	114	165	82	56	116
28	397	49	91	157	171	211	246	178	156	82	61	68
29	229	45	83	162	---	200	209	141	147	98	57	56
30	169	44	74	156	---	191	193	130	143	81	54	52
31	140	---	77	164	---	187	---	109	---	85	55	---
TOTAL	2357	1932	2605	4944	10084	8357	5267	3794	8896	4077	2148	1611
MEAN	76.0	64.4	84.0	159	360	270	176	122	297	132	69.3	53.7
MAX	562	122	269	498	1410	511	295	180	1590	374	132	116
MIN	29	44	42	105	160	155	132	92	94	75	54	46
CFSM	.52	.44	.57	1.08	2.45	1.84	1.20	.83	2.02	.90	.47	.37
IN.	.60	.49	.66	1.25	2.55	2.11	1.33	.96	2.25	1.03	.54	.41

CAL YR 1981 TOTAL 28233 MEAN 77.4 MAX 562 MIN 20 CFSM .53 IN 7.14
WTR YR 1982 TOTAL 56072 MEAN 154 MAX 1590 MIN 29 CFSM 1.05 IN 14.19

02028500 ROCKFISH RIVER NEAR GREENFIELD, VA

LOCATION.--Lat 37°52'10", long 78°49'25", Nelson County, Hydrologic Unit 02080203, on left bank 50 ft (15 m) downstream from bridge on State Highway 634, 2.8 mi (4.5 km) downstream from confluence of North and South Forks, and 4.1 mi (6.6 km) south of Greenfield.

DRAINAGE AREA.--94.6 mi² (245.0 km²).

PERIOD OF RECORD.--April 1943 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 530.29 ft (161.632 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1943, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 22 to Sept. 9, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 139 ft³/s (3.936 m³/s), 19.95 in/yr (507 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s (1,980 m³/s) Aug. 20, 1969, gage height, 31.2 ft (9.51 m), from floodmarks, from rating curve extended above 8,500 ft³/s (240 m³/s) on basis of contracted-opening measurement at gage height 18.11 ft (5.520 m), slope-area measurements at gage heights 17.2 ft (5.24 m), 23.4 ft (7.13 m), and 31.2 ft (9.51 m), and peak runoff comparison with nearby stations; minimum, 0.20 ft³/s (0.006 m³/s) Sept. 8-12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.4 ft (7.13 m), from floodmarks, discharge, about 30,000 ft³/s (850 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft³/s (54.4 m³/s) at 0800 hours June 13, gage height, 5.85 ft (1.783 m), no other peak above base of 1,500 ft³/s (42 m³/s); minimum, 9.4 ft³/s (0.27 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	62	32	139	451	139	125	166	156	79	54	22
2	15	56	54	137	275	148	113	146	110	69	48	25
3	14	51	45	125	628	150	260	135	99	68	47	27
4	12	48	42	206	607	135	288	125	147	74	46	20
5	14	46	44	196	448	129	237	115	432	94	46	16
6	14	49	43	171	349	123	207	110	285	74	50	16
7	12	40	41	152	266	186	171	102	204	66	70	15
8	10	38	41	133	216	207	156	95	164	62	60	14
9	10	37	38	113	198	181	152	90	139	61	54	15
10	10	36	37	96	166	168	137	85	333	80	50	15
11	12	34	37	86	143	161	127	80	336	66	45	14
12	16	34	34	80	125	161	117	75	304	61	52	11
13	16	34	32	72	119	148	112	72	1340	55	46	11
14	14	34	41	65	110	139	107	70	827	55	42	10
15	13	33	86	62	105	141	101	67	578	61	39	12
16	14	33	101	57	110	156	96	64	454	69	39	13
17	13	33	83	55	435	168	115	63	358	63	39	12
18	13	32	75	56	542	156	127	60	291	59	44	10
19	16	31	58	66	400	168	105	63	234	63	40	9.6
20	14	30	55	75	330	359	92	72	184	56	35	11
21	14	30	60	83	275	394	91	68	150	39	33	12
22	15	29	66	75	230	333	86	71	134	54	29	14
23	18	29	73	66	190	288	83	107	121	70	27	15
24	27	30	78	60	180	250	84	82	109	60	24	12
25	22	31	79	58	166	225	84	83	100	56	22	12
26	48	32	79	60	156	231	192	72	98	54	21	28
27	573	33	78	66	152	187	244	73	94	54	20	69
28	239	33	75	71	146	164	256	124	88	53	23	29
29	109	31	72	65	---	148	219	99	84	52	22	22
30	84	29	65	66	---	135	193	115	80	54	21	19
31	71	---	64	157	---	131	---	174	---	56	20	---
TOTAL	1486	1098	1808	2969	7518	5809	4477	2923	8033	1937	1208	530.6
MEAN	47.9	36.6	58.3	95.8	269	187	149	94.3	268	62.5	39.0	17.7
MAX	573	62	101	206	628	394	288	174	1340	94	70	69
MIN	10	29	32	55	105	123	83	60	80	39	20	9.6
CFSM	.51	.39	.62	1.01	2.84	1.98	1.58	1.00	2.83	.66	.41	.19
IN.	.58	.43	.71	1.17	2.96	2.28	1.76	1.15	3.16	.76	.48	.21

CAL YR 1981 TOTAL 18949.2 MEAN 51.9 MAX 573 MIN 5.0 CFSM .55 IN 7.45
WTR YR 1982 TOTAL 39796.6 MEAN 109 MAX 1340 MIN 9.6 CFSM 1.15 IN 15.65

02029000 JAMES RIVER AT SCOTTSVILLE, VA

LOCATION.--Lat 37°47'50", long 78°29'30", Albemarle County, Hydrologic Unit 02080203, on left bank 900 ft (270 m) downstream from bridge on State Highway 20 at Scottsville, 6.8 mi (10.9 km) upstream from Hardware River, and at mile 188.6 (303.5 km).

DRAINAGE AREA.--4,584 mi² (11,873 km²).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 727: 1931(m). WSP 972: 1936(M), 1940(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 253.18 ft (77.169 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 197.5 mi (317.8 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 5,128 ft³/s (145.2 m³/s), 15.19 in/yr (386 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301,000 ft³/s (8,520 m³/s) June 22, 1972, gage height, 34.02 ft (10.369 m), from floodmarks, from rating curve extended above 120,000 ft³/s (3,400 m³/s) on basis of slope-conveyance study; minimum daily, 300 ft³/s (8.50 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1870 reached a stage of 30.7 ft (9.36 m), discharge, about 215,000 ft³/s (6,100 m³/s), and flood in November 1877 reached a stage of 27.9 ft (8.50 m), discharge, about 160,000 ft³/s (4,500 m³/s), from information by local resident. Flood in March 1913 reached a stage of 25.16 ft (7.669 m), from floodmarks, discharge, 121,000 ft³/s (3,430 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft³/s (990 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 4	2245	44200	1250	16.20	4.938	June 14	1915	*69800	1980	20.08	6.120

Minimum discharge, 548 ft³/s (15.5 m³/s) Oct. 10, gage height, 2.08 ft (0.634 m); minimum daily, 573 ft³/s (16.2 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	816	2780	1170	3750	6080	5520	5480	8620	4240	2940	2050	1150
2	749	2430	1300	4660	10300	5440	5240	7360	5220	2640	1780	1010
3	597	2230	1440	3850	20600	6090	4520	6250	4990	2640	2070	1410
4	595	1800	1510	6340	36400	7010	5330	5750	9700	2310	1730	1180
5	573	1840	1630	11900	35600	8080	4870	4940	10900	3430	1750	1280
6	579	1680	1900	17900	21600	7730	4860	4780	9620	5780	1780	758
7	586	1640	1680	11300	15300	7820	4830	3840	6850	3450	2050	1060
8	652	1600	1710	8390	11700	12400	4620	3940	6050	2640	2150	1060
9	631	1500	1470	7080	9900	16700	4770	3160	4860	3350	2650	1050
10	689	1300	1640	6140	8530	13700	4500	3210	6110	2620	3620	921
11	685	1150	1320	4700	7920	11500	4450	3170	15700	3170	2970	1140
12	618	1250	1390	3870	7740	9360	4260	3120	15300	2850	2940	881
13	750	1150	1260	3120	7420	8380	4040	2670	21900	2910	3330	1090
14	698	1160	1210	3210	7080	7840	3630	2520	64100	2870	1930	805
15	920	1210	1800	3370	6130	7440	3610	2350	44100	3040	1640	999
16	899	1270	4290	3680	5880	7810	3340	2170	22600	3030	1790	1030
17	840	1080	4160	2990	6520	12100	3470	2250	17000	2490	1990	994
18	979	954	3730	2770	12200	14900	3710	2430	13900	2140	2460	840
19	917	1140	3240	2630	23700	13600	3570	2160	10300	2010	2160	970
20	909	1090	2480	2660	18900	13300	4540	2310	7960	2740	2340	825
21	1050	1030	2220	3160	14900	16500	4460	2330	6560	2600	1760	1010
22	944	1180	2300	3130	12000	23900	4080	2260	5840	2420	1540	997
23	851	1110	2280	3710	10200	18500	3910	3010	5060	2450	1420	1060
24	978	1120	2780	5980	9030	15000	3570	2470	4480	4900	1750	1040
25	1130	1040	4390	5940	7820	12300	3080	2780	3890	2650	1330	1010
26	995	1170	6570	5180	6830	10200	3660	2600	3710	2350	1250	1190
27	3120	1260	5660	4700	6500	8760	5730	2450	3240	2170	1220	1680
28	8960	1160	4320	4010	6080	7760	9590	4560	3280	1960	1430	2370
29	10300	1130	3790	3870	---	6740	12800	4680	3110	1980	1370	1780
30	6890	1240	3260	3780	---	6360	10900	3840	2900	1830	1240	1800
31	4430	---	2850	3690	---	5800	---	3920	---	2130	1670	---
TOTAL	54330	41694	80750	161460	352860	328540	149420	111900	343470	86490	61160	34390
MEAN	1753	1390	2605	5208	12600	10600	4981	3610	11450	2790	1973	1146
MAX	10300	2780	6570	17900	36400	23900	12800	8620	64100	5780	3620	2370
MIN	573	954	1170	2630	5880	5440	3080	2160	2900	1830	1220	758
(*)	+122	+44	+289	+239	-55	0	+3	+5	-47	-69	-126	-122

CAL YR 1981 TOTAL 869482 MEAN 2382 MAX 24200 MIN 573 MEAN‡ 2476 CFSM‡ 0.54 IN‡ 7.33
WTR YR 1982 TOTAL 1806464 MEAN 4949 MAX 64100 MIN 573 MEAN‡ 4974 CFSM‡ 1.09 IN‡ 14.73

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

02030000 HARDWARE RIVER BELOW BRIERY RUN, NEAR SCOTTSVILLE, VA

LOCATION.--Lat 37°48'45", long 78°27'20", Fluwanna County, Hydrologic Unit 02080203, on left bank 75 ft (23 m) upstream from bridge on State Highway 637, 0.8 mi (1.3 km) downstream from Briery Run, 2.4 mi (3.9 km) northeast of Scottsville, and 10.8 mi (17.4 km) upstream from mouth.

DRAINAGE AREA.--116 mi² (300 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 952: 1941(M). WSP 1002: 1940, 1943. WSP 1032: 1940, 1944.

GAGE.--Water-stage recorder. Datum of gage is 294.96 ft (89.904 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 127 ft³/s (3.600 m³/s), 14.87 in/yr (378 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Aug. 20, 1969, gage height, 31.0 ft (9.45 m), from floodmarks, from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of slope-area measurements at gage heights 23.8 ft (7.25 m) and 31.0 ft (9.45 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 5-8, 1966; minimum gage height, 0.81 ft (0.247 m) Sept. 8, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,540 ft³/s (71.9 m³/s) at 2100 hours Feb. 3, gage height, 11.28 ft (3.438 m), no other peak above base of 1,500 ft³/s (42 m³/s); minimum, 14 ft³/s (0.40 m³/s) Oct. 9, gage height, 1.50 ft (0.457 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	46	31	297	831	116	135	116	132	106	62	35
2	18	42	49	264	358	137	127	110	88	70	51	36
3	19	39	44	116	1860	176	137	102	82	64	48	51
4	17	35	41	347	1110	145	151	94	591	64	44	36
5	17	34	43	212	373	135	130	88	1180	67	43	31
6	18	57	39	123	252	124	130	86	407	62	84	31
7	17	42	35	99	202	222	120	85	204	56	74	29
8	16	36	35	81	172	281	118	84	151	52	75	28
9	15	34	33	74	167	181	123	81	125	52	70	29
10	16	34	30	47	163	148	124	76	128	80	57	29
11	16	33	29	76	145	132	116	74	162	72	68	29
12	18	32	26	70	135	130	114	70	128	68	143	28
13	19	30	24	66	134	120	111	69	660	55	63	27
14	17	29	35	63	134	112	108	67	477	51	54	26
15	18	30	126	61	127	110	104	64	235	55	151	26
16	18	29	216	60	128	128	102	62	181	51	186	27
17	17	29	125	60	370	148	104	60	184	48	91	25
18	16	28	91	60	577	123	114	58	233	44	119	24
19	17	27	66	61	314	119	102	56	152	44	73	24
20	18	28	56	63	257	740	101	63	121	48	57	30
21	19	27	58	84	200	701	99	62	108	42	49	34
22	16	26	74	99	165	356	96	64	103	39	44	33
23	20	25	76	80	142	249	93	70	99	92	42	34
24	24	28	75	69	132	211	92	70	93	294	42	28
25	24	31	74	62	121	184	91	68	84	81	39	26
26	44	31	80	68	110	190	177	62	81	60	38	34
27	378	32	69	50	112	163	236	74	81	51	36	115
28	240	33	61	47	118	148	282	576	76	50	39	50
29	91	30	56	64	---	144	155	138	73	54	36	36
30	66	28	50	66	---	144	125	220	78	58	33	34
31	52	---	48	99	---	137	---	124	---	72	33	---
TOTAL	1316	985	1895	3088	8909	6154	3817	3093	6497	2102	2044	1025
MEAN	42.5	32.8	61.1	99.6	318	199	127	99.8	217	67.8	65.9	34.2
MAX	378	57	216	347	1860	740	282	576	1180	294	186	115
MIN	15	25	24	47	110	110	91	56	73	39	33	24
CFSM	.37	.28	.53	.86	2.74	1.72	1.10	.86	1.87	.58	.57	.30
IN.	.42	.32	.61	.99	2.86	1.97	1.22	.99	2.08	.67	.66	.33

CAL YR 1981 TOTAL 15766.6 MEAN 43.2 MAX 664 MIN 9.2 CFSM .37 IN 5.06
WTR YR 1982 TOTAL 40925.0 MEAN 112 MAX 1860 MIN 15 CFSM .97 IN 13.12

02030500 SLATE RIVER NEAR ARVONIA, VA

LOCATION.--Lat 37°42'10", long 78°22'40", Buckingham County, Hydrologic Unit 02080203, on left bank 250 ft (76 m), upstream from bridge on State Highway 676, 1.8 mi (2.9 km) northwest of Arvonia, 2.9 mi (4.7 km) upstream from Hunts Creek, and 3.8 mi (6.1 km) upstream from mouth.

DRAINAGE AREA.--226 mi^2 (585 km^2).

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1928-29, 1932, 1933-34(M), 1935. WSP 2104: 1928(M), 1935-37(M), 1940(M), 1944(M), 1949(M), 1955(M), drainage area. WDR VA-72-1: 1935, 1937, 1944, 1949, 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 238.78 ft (72.780 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Feb. 15, 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 230 ft^3/s (6.514 m^3/s), 13.82 in/yr (351 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft^3/s (1,200 m^3/s) June 22, 1972, gage height, 25.10 ft (7.650 m), from high-water mark in gage house, from rating curve extended above 5,900 ft^3/s (170 m^3/s) on basis of slope-area measurement of peak flow; minimum, 2.0 ft^3/s (0.057 m^3/s) Sept. 28 to Oct. 2, 1930; minimum gage height, 1.35 ft (0.411 m) Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,100 ft^3/s (59 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 28	0100	2860	81.0	9.67	2.947	June 5	1430	4000	113	11.14	3.395
Feb. 3	1530	*5640	160	12.91	3.935						

Minimum discharge, 24 ft^3/s (0.68 m^3/s) Oct. 1, 4, gage height, 2.10 ft (0.640 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	106	62	707	946	205	172	172	131	92	103	65
2	26	94	80	444	546	245	162	159	109	87	90	66
3	26	85	94	282	4140	481	166	150	137	78	81	63
4	25	79	103	1160	4390	437	202	141	2100	89	76	57
5	26	75	106	1020	729	359	165	130	3520	166	70	52
6	26	73	103	356	394	475	162	123	2010	151	74	49
7	27	68	88	248	289	649	161	120	401	102	75	49
8	27	64	80	198	232	1140	146	119	255	106	76	49
9	28	62	74	168	219	453	158	113	197	536	88	50
10	28	61	69	143	257	314	183	105	422	194	116	51
11	28	60	66	120	208	259	162	99	1160	208	99	51
12	30	59	64	130	181	234	150	95	470	501	472	50
13	33	58	62	130	179	211	145	93	452	178	175	47
14	30	57	66	130	199	196	142	90	725	127	105	45
15	29	58	466	135	190	194	137	87	353	134	90	45
16	30	59	1070	137	186	306	134	83	240	121	95	45
17	31	58	415	129	673	514	137	81	206	104	96	44
18	32	57	255	125	1150	320	194	78	195	93	460	48
19	31	55	187	120	503	248	179	76	169	86	233	45
20	32	55	136	120	395	834	149	89	150	84	126	42
21	33	57	136	134	301	764	149	129	133	99	97	44
22	32	56	149	162	246	405	144	124	121	103	83	52
23	35	53	194	154	206	292	132	270	121	89	75	55
24	48	57	228	155	189	245	126	225	116	289	73	51
25	58	73	286	133	176	220	123	158	103	170	70	46
26	108	78	463	134	159	230	208	141	102	107	64	54
27	1500	76	258	104	162	226	494	156	109	89	60	195
28	1950	77	189	126	194	189	377	526	108	85	106	124
29	293	70	155	125	---	176	245	195	100	183	100	74
30	168	63	133	135	---	171	193	194	95	101	70	63
31	128	---	122	204	---	170	---	190	---	98	64	---
TOTAL	4923	2003	5959	7568	17639	11162	5397	4511	14510	4650	3662	1771
MEAN	159	66.8	192	244	630	360	180	146	484	150	118	59.0
MAX	1950	106	1070	1160	4390	1140	494	526	3520	536	472	195
MIN	25	53	62	104	159	170	123	76	95	78	60	42
CFSM	.70	.30	.85	1.08	2.79	1.59	.80	.65	2.14	.66	.52	.26
IN.	.81	.33	.98	1.25	2.90	1.84	.89	.74	2.39	.77	.60	.29

CAL YR 1981 TOTAL 36343 MEAN 99.6 MAX 1950 MIN 10 CFSM .44 IN 5.98
WTR YR 1982 TOTAL 83755 MEAN 229 MAX 4390 MIN 25 CFSM 1.01 IN 13.79

02031000 MECHUMS RIVER NEAR WHITE HALL, VA

LOCATION.--Lat 38°06'09", long 78°35'35", Albemarle County, Hydrologic Unit 02080204, on right bank 20 ft (6 m) downstream from bridge on State Highway 614, 1.5 mi (2.4 km) downstream from Rocky Run, 4.0 mi (6.4 km) southeast of White Hall, and 4.9 mi (7.9 km) upstream from confluence with Moormans River.

DRAINAGE AREA.--95.4 mi² (247.1 km²).

PERIOD OF RECORD.--October 1942 to September 1951, October 1979 to current year. Prior to September 1951, published as Mechum River near Ivy.

GAGE.--Water-stage recorder. Datum of gage is 429.75 ft (130.988 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1942, to Sept. 30, 1951, on right bank 20 ft (6 m) downstream from former highway bridge at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--12 years, 102 ft³/s (2.889 m³/s) 14.52 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) Oct. 15, 1942, gage height, 30.3 ft (9.24 m), datum then in use, from floodmarks, from rating curve extended above 8,000 ft³/s (230 m³/s); minimum, 0.6 ft³/s (0.017 m³/s) Sept. 9, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 6, 1979, reached a stage of 24.5 ft (7.47 m), from floodmarks, discharge, about 10,500 ft³/s (297 m³/s), from rating curve extended above 3,400 ft³/s (96 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1530	1020	28.9	8.38	2.554
Feb. 1	0230	1350	38.2	9.10	2.774
Feb. 3	1800	1360	38.5	9.13	2.783
Feb. 17	1930	1230	34.8	8.85	2.697
Mar. 20	1400	2400	68.0	11.20	3.414

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 4	0030	677	19.2	7.58	2.310
June 13	1100	*2680	75.9	11.77	3.587
Aug. 15	0300	994	28.2	8.33	2.539
Aug. 16	0400	989	28.0	8.32	2.536
Aug. 17	2230	1580	44.7	9.55	2.911

Minimum discharge, 13 ft³/s (0.37 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	61	32	106	505	96	94	103	63	72	87	31
2	22	55	47	108	203	103	86	92	61	59	64	31
3	20	51	41	90	746	111	109	85	55	56	62	29
4	18	49	38	127	472	99	127	79	224	56	53	25
5	19	46	41	119	288	96	102	74	376	74	48	26
6	17	72	39	97	212	89	100	71	195	59	53	22
7	16	92	37	87	159	133	87	69	130	50	85	21
8	14	86	36	79	130	181	85	66	102	51	86	20
9	14	68	33	73	130	139	89	63	87	64	107	21
10	14	47	31	63	114	118	84	59	192	89	69	21
11	16	47	31	61	99	109	81	56	271	79	62	21
12	17	45	32	58	90	113	77	54	226	76	132	20
13	17	41	28	55	90	107	77	52	1730	58	80	18
14	16	33	33	53	84	102	75	49	686	50	68	16
15	16	33	68	51	80	102	71	47	370	46	305	18
16	16	33	85	50	82	119	69	44	250	44	266	17
17	16	33	69	49	456	144	76	43	191	44	296	16
18	15	31	57	48	490	126	95	41	152	50	372	15
19	16	30	56	48	343	119	77	41	126	48	113	14
20	16	30	55	47	285	904	72	51	105	38	80	14
21	16	29	53	64	218	610	72	44	92	33	64	16
22	17	27	53	66	168	370	67	47	85	31	52	20
23	21	27	55	59	139	255	65	65	82	47	46	20
24	24	31	57	61	122	199	63	57	74	80	44	16
25	22	34	57	54	108	164	64	55	71	48	42	15
26	48	34	56	52	96	158	113	52	67	38	36	38
27	462	34	54	48	95	126	172	50	65	33	33	95
28	233	33	51	48	100	107	195	152	62	33	36	43
29	105	30	49	50	---	102	139	77	60	43	33	32
30	79	29	45	57	---	98	114	76	71	177	30	28
31	67	---	45	93	---	94	---	65	---	133	30	---
TOTAL	1429	1291	1464	2121	6104	5393	2797	1979	6321	1859	2934	739
MEAN	46.1	43.0	47.2	68.4	218	174	93.2	63.8	211	60.0	94.6	24.6
MAX	462	92	85	127	746	904	195	152	1730	177	372	95
MIN	14	27	28	47	80	89	63	41	55	31	30	14
CFSM	.48	.45	.50	.72	2.29	1.82	.98	.67	2.21	.63	.99	.26
IN.	.56	.50	.57	.83	2.38	2.10	1.09	.77	2.46	.72	1.14	.29

CAL YR 1981 TOTAL 16644.0 MEAN 45.6 MAX 675 MIN 7.2 CFSM .48 IN 6.49
WTR YR 1982 TOTAL 34431.0 MEAN 94.3 MAX 1730 MIN 14 CFSM .99 IN 13.42

02032250 MOORMANS RIVER NEAR FREE UNION, VA

LOCATION.--Lat 38°08'26", long 78°33'22", Albemarle County, Hydrologic Unit 02080204, on right bank 130 ft (40 m) upstream from bridge on State Highway 601, 0.4 mi (0.6 km) upstream from confluence with Mechums River, 0.8 mi (1.3 km) downstream from Wards Creek, and 1.1 mi (1.8 km) southeast of Free Union.

DRAINAGE AREA.--74.6 mi^2 (193.1 km^2).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 403.11 ft (122.868 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Rivanna Water and Sewer Authority at Sugar Hollow reservoir 12.0 mi (19.3 km) upstream, capacity, 1,320 acre-ft (1.63 hm^3), from which an average of 6.8 ft^3/s (0.19 m^3/s) is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,030 ft^3/s (114 m^3/s) June 13, 1982, gage height, 12.73 ft (3.880 m), from rating curve extended above 2,700 ft^3/s (76 m^3/s); minimum, 1.3 ft^3/s (0.037 m^3/s) Sept. 16, 17, 1980, gage height, 2.86 ft (0.872 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 20.2 ft (6.16 m), from floodmarks, discharge, about 8,800 ft^3/s (249 m^3/s), and flood of Sept. 6, 1979, reached a stage of 21.55 ft (6.568 m), from floodmarks, discharge, about 9,700 ft^3/s (275 m^3/s), from rating curve extended above 2,700 ft^3/s (76 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft^3/s (20 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 27	1430	848	24.0	6.15	1.875	Feb. 17	1900	1300	36.8	7.15	2.179
Feb. 1	0330	1580	44.7	7.77	2.368	Mar. 20	1300	1030	29.2	6.55	1.996
Feb. 3	1700	834	23.6	6.12	1.865	June 13	1000	*4030	114	12.73	3.880
Feb. 4	0130	866	24.5	6.19	1.887						

Minimum discharge, 4.6 ft^3/s (0.13 m^3/s) Oct. 9-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	37	19	83	337	94	78	135	107	56	67	18
2	8.1	33	26	96	121	103	74	115	74	34	40	19
3	8.4	30	25	90	480	115	96	94	63	30	31	17
4	7.0	28	24	117	566	105	110	82	113	31	27	13
5	7.0	26	24	135	316	99	95	70	341	36	24	12
6	7.0	27	24	127	206	96	86	64	242	32	113	12
7	6.0	21	23	115	145	141	77	57	165	27	242	10
8	5.6	21	23	96	163	170	72	52	121	24	190	10
9	4.8	20	23	79	103	145	76	50	96	39	131	11
10	4.8	19	20	63	96	145	70	48	141	32	88	12
11	5.[illegible]	18	23	48	105	139	67	45	167	70	64	12
12	5.3	17	22	45	88	135	65	40	412	78	107	10
13	6.0	16	19	41	83	121	63	38	2890	40	60	9.2
14	6.0	15	22	39	78	111	61	35	1030	31	46	8.4
15	5.6	16	45	36	72	115	56	33	532	29	87	8.4
16	7.0	17	62	34	76	121	54	32	316	26	62	9.2
17	6.4	17	50	32	504	153	53	30	228	23	64	8.4
18	5.6	16	43	30	719	155	62	29	174	24	102	7.2
19	6.0	15	37	32	438	165	49	27	144	22	59	6.0
20	5.6	15	32	34	348	610	49	28	98	19	41	6.4
21	6.0	15	30	56	292	690	53	31	86	17	34	7.6
22	6.7	15	34	50	242	500	44	32	71	14	30	9.6
23	8.1	15	35	42	167	350	40	49	64	83	28	10
24	11	16	39	43	153	250	40	40	52	62	27	8.8
25	11	18	40	40	115	195	40	38	47	28	26	8.0
26	30	18	41	39	111	150	78	36	43	22	20	14
27	250	18	41	35	105	130	176	34	40	18	20	49
28	150	18	40	35	99	120	279	178	36	17	22	22
29	76	18	38	37	---	110	219	74	36	18	20	16
30	56	17	35	44	---	90	172	76	47	98	17	14
31	44	---	38	76	---	80	---	61	---	113	17	---
TOTAL	774.5	592	997	1869	6328	5703	2554	1753	7976	1193	1906	378.2
MEAN	25.0	19.7	32.2	60.3	226	184	85.1	56.5	266	38.5	61.5	12.6
MAX	250	37	62	135	719	690	279	178	2890	113	242	49
MIN	4.8	15	19	30	72	80	40	27	36	14	17	6.0
CFSM	.34	.26	.43	.81	3.03	2.47	1.14	.76	3.57	.52	.83	.17
IN.	.39	.30	.50	.93	3.16	2.84	1.27	.87	3.98	.60	.95	.19

CAL YR 1981 TOTAL 11635.6 MEAN 31.9 MAX 417 MIN 1.8 CFSM .43 IN 5.80
WTR YR 1982 TOTAL 32023.7 MEAN 87.7 MAX 2890 MIN 4.8 CFSM 1.18 IN 15.98

02032400 BUCK MOUNTAIN CREEK NEAR FREE UNION, VA

LOCATION.--Lat 38°09'16", long 78°32'22", Albemarle County, Hydrologic Unit 02080204, on left bank at downstream side of bridge on State Highway 665, 0.2 mi (0.3 km) downstream from Piney Creek, 1.6 mi (2.6 km) east of Free Union, and 2.0 mi (3.2 km) upstream from mouth.

DRAINAGE AREA.--37.0 mi² (95.8 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 408.71 ft (124.575 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,120 ft³/s (88.4 m³/s) Apr. 9, 1980, gage height, 7.91 ft (2.411 m), from rating curve extended above 1,200 ft³/s (34 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Sept. 11-14, 1980, Aug. 27, 28, 29, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 22, 1979, reached a stage of 11.12 ft (3.389 m), from floodmarks, discharge, about 6,600 ft³/s (187 m³/s), from rating curve extended above 1,200 ft³/s (34 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1415	914	25.9	4.61	1.405	Mar. 21	0600	671	19.0	4.04	1.231
Feb. 3	1600	510	14.4	3.60	1.097	June 13	0915	*2610	73.9	7.32	2.231
Feb. 17	1715	663	18.8	4.02	1.225	July 23	1900	759	21.5	4.26	1.298

Minimum discharge, 3.7 ft³/s (0.10 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	19	12	43	144	36	41	50	79	30	43	11
2	7.3	17	14	37	66	41	36	42	55	23	30	11
3	6.2	16	13	34	289	43	48	37	71	22	25	9.2
4	5.9	14	12	56	168	37	44	33	136	22	20	7.4
5	6.2	14	14	47	106	35	39	30	276	34	19	7.1
6	5.6	15	13	38	77	33	34	28	142	24	25	6.7
7	5.3	12	13	34	56	60	31	28	89	21	62	6.5
8	5.0	12	12	29	43	68	30	26	62	19	45	6.6
9	4.6	11	12	26	55	53	35	24	45	26	35	7.5
10	5.3	11	11	25	47	46	33	22	119	24	29	7.3
11	5.6	11	11	23	38	42	31	21	127	23	25	6.7
12	5.9	10	11	22	34	44	29	20	339	23	29	6.1
13	5.9	10	11	21	33	40	28	19	1590	26	21	5.6
14	5.6	9.7	15	20	30	37	28	19	342	21	19	5.5
15	5.9	9.6	34	19	28	40	27	17	176	20	28	5.6
16	6.2	9.5	35	18	30	50	26	17	125	18	36	5.5
17	5.9	9.5	26	17	240	64	30	16	99	19	69	4.8
18	6.2	9.7	22	16	207	56	31	16	80	20	59	4.5
19	6.2	9.5	20	16	146	52	26	16	67	20	29	4.0
20	6.2	9.7	18	15	123	258	25	19	55	22	22	4.8
21	6.2	9.6	16	35	96	313	25	16	43	16	19	5.7
22	6.9	9.2	17	27	76	167	23	16	39	13	16	7.0
23	8.7	9.1	18	27	62	113	22	24	36	126	15	8.4
24	9.9	10	20	25	52	87	22	20	33	52	15	6.4
25	8.7	11	22	22	43	71	22	19	32	26	13	5.8
26	18	11	21	20	36	68	55	18	30	21	11	15
27	248	11	20	19	36	56	141	18	31	18	11	25
28	91	11	19	18	36	50	123	157	27	16	13	10
29	40	11	18	22	---	40	83	54	26	14	10	7.9
30	29	10	16	28	---	37	62	63	33	65	9.9	7.3
31	23	---	18	57	---	39	---	48	---	77	11	---
TOTAL	606.9	342.1	534	856	2397	2176	1230	953	4404	901	813.9	231.9
MEAN	19.6	11.4	17.2	27.6	85.6	70.2	41.0	30.7	147	29.1	26.3	7.73
MAX	248	19	35	57	289	313	141	157	1590	126	69	25
MIN	4.6	9.1	11	15	28	33	22	16	26	13	9.9	4.0
CFSM	.53	.31	.47	.75	2.31	1.90	1.11	.83	3.97	.79	.71	.21
IN.	.61	.34	.54	.86	2.41	2.19	1.24	.96	4.43	.91	.82	.23

CAL YR 1981 TOTAL 6619.9 MEAN 18.1 MAX 306 MIN 1.8 CFSM .49 IN 6.65
WTR YR 1982 TOTAL 15445.8 MEAN 42.3 MAX 1590 MIN 4.0 CFSM 1.14 IN 15.52

02032515 SOUTH FORK RIVANNA RIVER NEAR CHARLOTTESVILLE, VA

LOCATION.--Lat 38°06'06", long 78°27'39", Albemarle County, Hydrologic Unit 02080204, on left bank 10 ft (3 m) downstream from upstream bridge on U.S. Highway 29, 0.4 mi (0.6 km) downstream from South Fork Rivanna River dam, 2.5 mi (4.0 km) northeast of Charlottesville city limits, and 2.9 mi (4.7 km) upstream from mouth.

DRAINAGE AREA.--260 mi² (673 km²).

PERIOD OF RECORD.--August 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 330 ft (101 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Mar. 24 to Apr. 29, which are fair. Flow regulated by Rivanna Water and Sewer Authority at South Fork Rivanna and Sugar Hollow reservoirs, combined capacity, 6,540 acre-ft (8.06 hm³), from which an average of 14.3 ft³/s (0.40 m³/s) is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s (430 m³/s) Sept. 6, 1979, gage height, 23.50 ft (7.163 m), from floodmarks, from rating curve extended above 12,000 ft³/s (340 m³/s); minimum daily, 11 ft³/s (0.31 m³/s) June 28, 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,200 ft³/s (232 m³/s) June 13, gage height, 16.23 ft (4.947 m); minimum, 21 ft³/s (0.59 m³/s) Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	140	75	278	1080	294	270	330	298	232	287	79
2	55	125	104	323	498	305	260	287	276	164	192	83
3	46	113	96	280	1760	330	330	256	221	146	160	77
4	43	104	89	344	1620	308	370	228	553	140	136	60
5	44	100	92	400	849	294	300	206	1250	221	121	53
6	41	123	87	342	582	278	290	194	831	180	144	51
7	39	142	83	308	409	361	270	188	505	150	384	55
8	31	138	85	272	387	540	240	182	382	144	382	48
9	31	129	72	245	325	409	280	172	312	166	315	62
10	32	91	72	176	310	382	240	154	467	265	348	53
11	38	85	70	156	278	355	230	144	771	254	296	53
12	41	81	66	136	254	355	215	144	1020	245	325	46
13	41	77	68	132	247	328	205	134	5920	160	217	43
14	39	70	79	129	232	312	195	127	2520	140	180	39
15	38	70	160	125	217	305	185	121	1260	130	584	41
16	41	68	234	119	221	342	170	113	816	125	576	43
17	38	68	194	113	988	415	250	108	592	115	375	34
18	41	66	166	117	1860	393	280	104	460	127	824	29
19	41	62	138	117	1130	384	240	100	393	140	338	26
20	34	64	112	113	935	1760	220	123	371	129	221	36
21	36	59	119	186	726	1820	220	115	283	96	180	38
22	39	57	140	213	578	1120	200	121	252	79	144	55
23	53	55	146	190	460	735	190	156	236	274	130	64
24	68	72	150	184	409	600	185	152	210	373	125	53
25	64	74	156	166	340	500	200	138	200	158	113	39
26	123	75	158	166	312	450	400	130	192	96	100	70
27	949	75	152	138	305	380	560	138	184	98	89	44
28	739	75	144	148	312	330	700	1870	172	94	96	117
29	283	68	138	158	---	290	560	355	170	102	87	72
30	200	62	132	168	---	275	387	322	190	372	83	51
31	164	---	134	246	---	260	---	256	---	454	79	---
TOTAL	3522	2588	3711	6188	17624	15210	8642	7168	21307	5569	7631	1614
MEAN	114	86.3	120	200	629	491	288	231	710	180	246	53.8
MAX	949	142	234	400	1860	1820	700	1870	5920	454	824	117
MIN	31	55	66	113	217	260	170	100	170	79	79	26
*F³/S	13.4	12.5	12.2	12.3	12.9	12.7	13.9	14.5	13.6	13.1	13.5	15.0

CAL YR 1981 TOTAL 41841 MEAN 115 MAX 1560 MIN 11 *F³/S 12.5
WTR YR 1982 TOTAL 100774 MEAN 276 MAX 5920 MIN 26 *F³/S 13.3

* Diversion, in cubic feet per second, by City of Charlottesville; records furnished by Rivanna Water and Sewer Authority.

02032680 NORTH FORK RIVANNA RIVER NEAR PROFFIT, VA

LOCATION.--Lat 38°05'16", long 78°24'44", Albemarle County, Hydrologic Unit 02080204, on left bank 50 ft (15 m) downstream from bridge on State Highway 649, 1.9 mi (3.1 km) southeast of Proffit, and 2.2 mi (3.5 km) upstream from confluence with South Fork.

DRAINAGE AREA.--176 mi² (456 km²).

PERIOD OF RECORD.--April 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 323.43 ft (98.581 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Rivanna Water and Sewer Authority diverts about 0.2 ft³/s (0.01 m³/s) daily for municipal water supply 7.8 mi (12.6 km) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--12 years, 258 ft³/s (7.307 m³/s), 19.91 in/yr (506 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,800 ft³/s (901 m³/s) June 21, 1972, gage height, 30.4 ft (9.27 m), from floodmarks, from rating curve extended above 5,000 ft³/s (140 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Oct. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1930	1960	55.5	8.94	2.725	Mar. 21	1130	2180	61.7	9.58	2.920
Feb. 1	0730	1520	43.0	7.68	2.341	May 28	0900	*8830	250	18.22	5.553
Feb. 3	2100	2700	76.5	11.07	3.374	May 30	0600	1720	48.7	8.25	2.515
Feb. 18	0230	1700	48.1	8.19	2.496	June 5	1530	1970	55.8	8.97	2.734
Mar. 20	1830	2200	62.3	9.62	2.932	June 13	1900	6140	174	16.33	4.977

Minimum discharge, 17 ft³/s (0.48 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	112	47	286	883	198	222	298	466	142	162	27
2	22	98	65	228	464	196	212	266	430	120	103	28
3	21	86	60	192	1570	218	206	240	329	109	83	27
4	22	76	59	290	1350	202	244	218	587	105	72	24
5	21	76	65	276	703	192	212	198	1440	109	63	22
6	21	92	59	220	442	182	202	186	821	109	61	21
7	20	76	56	200	332	228	188	176	475	98	86	21
8	20	68	53	156	296	370	178	168	339	89	94	21
9	18	63	51	136	286	306	180	164	282	88	77	22
10	19	60	48	84	308	272	190	154	382	134	68	22
11	20	58	47	102	270	254	170	140	592	124	57	22
12	21	56	46	95	252	252	160	130	570	114	80	22
13	21	51	50	90	240	246	150	124	4430	136	67	21
14	21	48	56	85	228	230	140	118	2220	130	54	23
15	21	48	140	84	206	218	135	112	822	112	57	61
16	24	47	216	78	196	234	130	104	550	98	67	27
17	21	46	156	76	404	282	132	96	406	88	77	20
18	21	47	168	76	1170	276	164	90	318	78	83	18
19	23	45	92	78	694	262	150	86	278	77	71	18
20	22	44	74	82	670	1050	140	94	248	83	53	19
21	21	44	98	110	505	1680	136	94	222	78	44	20
22	21	41	156	120	403	940	130	90	202	68	39	22
23	25	40	156	108	334	601	124	106	192	63	35	24
24	41	44	136	112	300	445	122	124	170	93	33	24
25	36	50	138	94	272	360	120	120	152	78	32	21
26	56	48	138	94	244	329	178	110	146	64	29	23
27	784	48	124	76	230	290	501	108	140	49	27	83
28	677	48	112	82	215	256	804	4930	132	43	29	44
29	260	46	134	84	---	236	481	672	126	47	28	32
30	176	45	120	88	---	222	348	1200	130	146	26	27
31	136	---	86	150	---	216	---	604	---	214	26	---
TOTAL	2653	1751	3006	4032	13467	11243	6449	11320	17597	3086	1883	806
MEAN	85.6	58.4	97.0	130	481	363	215	365	587	99.5	60.7	26.9
MAX	784	112	216	290	1570	1680	804	4930	4430	214	162	83
MIN	18	40	46	76	196	182	120	86	126	43	26	18
CFSM	.49	.33	.55	.74	2.73	2.06	1.22	2.07	3.34	.57	.35	.15
IN.	.56	.37	.64	.85	2.85	2.38	1.36	2.39	3.72	.65	.40	.17

CAL YR 1981 TOTAL 33992 MEAN 93.1 MAX 1110 MIN 12 CFSM .53 IN 7.18
WTR YR 1982 TOTAL 77293 MEAN 212 MAX 4930 MIN 18 CFSM 1.21 IN 16.34

02034000 RIVANNA RIVER AT PALMYRA, VA

LOCATION.--Lat 37°51'28", long 78°15'58", Fluvanna County, Hydrologic Unit 02080204, on left bank 10 ft (3 m) upstream from bridge on U.S. Highway 15 at Palmyra, 0.5 mi (0.8 km) upstream from Cunningham Creek, and 15 mi (24 km) upstream from mouth.

DRAINAGE AREA.--664 mi² (1,720 km²).

PERIOD OF RECORD.--October 1933 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1936(M). WSP 852: 1937. WSP 892: 1934-35. WSP 1303: 1945-46(M). WSP 1503: 1956. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 210.39 ft (64.127 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1942, water-stage recorder at site 200 ft (60 m) downstream at same datum. Oct. 24, 1942, to Dec. 18, 1947, nonrecording gage 10 ft (3 m) downstream at same datum.

REMARKS.--Records good. Some diurnal fluctuation at times mostly at low and medium flow by South Fork Rivanna River Reservoir. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--49 years, 716 ft³/s (20.28 m³/s), 14.64 in/yr (372 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,000 ft³/s (2,440 m³/s) Aug. 20, 1969, gage height, 39.85 ft (12.146 m), from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of contracted-opening measurement of peak flow and velocity-area study; minimum, 5.2 ft³/s (0.15 m³/s) Sept. 9-11, 1966, gage height, 2.13 ft (0.649 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	2200	12300	348	18.27	5.569	May 28	2030	12300	348	18.31	5.581
Mar. 21	0030	7170	203	13.07	3.984	June 14	0600	*13800	391	19.53	5.953

Minimum discharge, 57 ft³/s (1.61 m³/s) Oct. 11, gage height, 2.59 ft (0.789 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	350	189	1190	2250	604	623	810	1000	567	664	158
2	92	311	255	1010	2090	658	570	686	993	393	403	163
3	88	287	271	739	7120	795	549	599	702	320	299	190
4	77	264	252	1380	6800	724	738	526	1420	293	256	160
5	75	245	247	1290	2820	647	603	468	4260	328	228	137
6	78	301	248	843	1830	592	556	427	3230	375	449	127
7	75	284	225	716	1190	849	527	409	1670	299	367	124
8	69	275	221	598	945	1660	476	398	1080	258	663	121
9	66	264	229	505	840	1050	480	390	825	257	471	117
10	64	247	209	413	879	860	516	356	758	350	396	120
11	59	212	200	255	717	771	478	323	1730	543	336	123
12	66	205	195	440	636	755	440	309	1260	651	758	123
13	71	199	190	466	602	707	425	301	6620	382	497	115
14	73	193	188	467	592	639	412	288	10200	366	324	106
15	69	184	451	450	527	605	396	272	3210	464	517	108
16	68	182	918	389	500	710	384	259	2060	302	1080	143
17	70	181	655	340	1290	893	387	250	1470	262	840	108
18	70	180	487	300	4580	847	484	240	1200	238	876	96
19	66	177	433	277	2900	775	459	232	933	271	685	88
20	73	171	307	274	2480	3080	394	267	774	262	390	89
21	66	173	292	305	1830	5870	387	278	634	243	305	109
22	64	165	320	401	1320	3630	380	264	565	200	259	109
23	70	159	436	367	1010	2310	351	315	516	182	224	135
24	102	165	479	367	854	1560	335	371	461	1110	212	129
25	115	192	440	381	739	1180	329	341	413	403	203	113
26	159	196	465	334	616	1090	534	313	390	265	193	113
27	1500	189	410	367	580	901	1210	292	380	219	175	431
28	3100	194	373	320	624	758	2420	7850	366	199	176	328
29	959	187	336	289	---	674	1430	3060	338	310	178	191
30	561	180	336	295	---	618	1010	2180	365	360	163	146
31	417	---	322	359	---	596	---	1420	---	935	149	---
TOTAL	8567	6512	10579	16127	49161	37408	18283	24494	49823	11607	12736	4320
MEAN	276	217	341	520	1756	1207	609	790	1661	374	411	144
MAX	3100	350	918	1380	7120	5870	2420	7850	10200	1110	1080	431
MIN	59	159	188	255	500	592	329	232	338	182	149	88
CFSM	.42	.33	.51	.78	2.65	1.82	.92	1.19	2.50	.56	.62	.22
IN.	.48	.36	.59	.90	2.75	2.10	1.02	1.37	2.79	.65	.71	.24

CAL YR 1981 TOTAL 99790 MEAN 273 MAX 3100 MIN 38 CFSM .41 IN 5.59
WTR YR 1982 TOTAL 249617 MEAN 684 MAX 10200 MIN 59 CFSM 1.03 IN 13.98

02034500 WILLIS RIVER AT LAKESIDE VILLAGE, VA

LOCATION.--Lat 37°40'00", long 78°10'00", Cumberland County, Hydrologic Unit 02080205, on left bank 15 ft (5 m) upstream from bridge on State Highway 690, 0.4 mi (0.6 km) east of Lakeside Village, 6.9 mi (11.1 km) upstream from mouth, and 7.7 mi (12.4 km) downstream from Reynolds Creek.

DRAINAGE AREA.--262 mi^2 (679 km^2).

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1978, published as Willis River at Flanagan Mills.

REVISED RECORDS.--WSP 872: 1936-37. WSP 892: 1928-29, 1932-34(M). WSP 972: 1937, 1940. WSP 1203: 1929. WSP 1303: 1928-30(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.98 ft (54.553 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 3, 1935, nonrecording gage at site 1,300 ft (396 m) upstream at same datum.

REMARKS.--Records good. Regulation of flow from Trice Lake 0.4 mi (0.6 km) upstream, total capacity, about 1,100 acre-ft (1.36 hm^3), tributary to Willis River, slightly affects flow at gage. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 252 ft^3/s (7.137 m^3/s), 13.06 in/yr (332 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 24,000 ft^3/s (680 m^3/s) June 22, 1972; maximum gage height, 29.8 ft (9.08 m) June 22, 1972, from floodmarks (backwater from James River); minimum discharge, 1.5 ft^3/s (0.042 m^3/s) Sept. 13, 14, 1966, gage height, 2.26 ft (0.689 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft^3/s (90.1 m^3/s) at 0630 hours June 6, gage height, 15.57 ft (4.746 m), no other peak above base of 1,700 ft^3/s (48 m^3/s); minimum, 12 ft^3/s (0.34 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	186	68	449	682	242	189	194	154	87	64	54
2	14	148	74	569	701	305	186	175	128	80	61	51
3	14	126	91	477	957	500	187	157	132	73	60	49
4	14	108	107	709	1380	590	219	145	768	73	55	45
5	16	96	121	933	1540	583	202	133	2040	101	51	40
6	15	89	126	953	1540	553	194	123	2850	178	48	36
7	16	88	114	776	1110	622	191	116	1970	115	49	34
8	16	88	103	404	611	951	176	119	1460	91	88	33
9	16	81	93	259	389	934	179	123	842	83	90	33
10	17	88	83	206	317	743	203	110	488	81	136	33
11	18	91	77	156	261	449	198	97	487	96	195	34
12	17	88	72	180	221	323	185	87	460	510	456	34
13	19	86	68	150	204	266	178	82	447	250	400	33
14	26	79	68	142	212	235	167	80	830	130	197	32
15	23	77	234	140	208	224	156	77	916	140	133	32
16	20	62	762	135	201	337	149	73	488	108	147	31
17	20	68	766	132	450	603	148	71	283	92	173	30
18	21	70	675	130	1040	533	173	67	225	80	183	30
19	24	61	400	129	1040	397	195	65	195	69	153	28
20	25	63	233	128	942	559	185	231	169	64	129	27
21	25	64	157	132	578	803	171	155	148	60	103	27
22	24	62	182	148	388	784	162	127	131	63	81	41
23	24	54	189	157	285	556	151	121	120	60	67	56
24	31	49	207	161	238	366	140	173	109	91	59	53
25	40	62	275	158	214	280	132	223	99	161	55	43
26	76	81	513	146	192	275	148	205	94	111	49	47
27	436	86	487	134	184	279	300	174	107	82	48	99
28	850	84	351	128	195	241	383	146	118	69	96	115
29	815	79	239	120	---	214	299	168	98	63	102	92
30	763	72	193	129	---	199	229	204	88	58	77	73
31	357	---	165	190	---	191	---	185	---	60	60	---
TOTAL	3804	2536	7293	8760	16280	14137	5775	4206	16444	3379	3665	1365
MEAN	123	84.5	235	283	581	456	193	136	548	109	118	45.5
MAX	850	186	766	953	1540	951	383	231	2850	510	456	115
MIN	12	49	68	120	184	191	132	65	88	58	48	27
CFSM	.47	.32	.90	1.08	2.22	1.74	.74	.52	2.09	.42	.45	.17
IN.	.54	.36	1.04	1.24	2.31	2.01	.82	.60	2.33	.48	.52	.19

CAL YR 1981 TOTAL 37128.7 MEAN 102 MAX 850 MIN 4.6 CFSM .39 IN 5.27
WTR YR 1982 TOTAL 87644.0 MEAN 240 MAX 2850 MIN 12 CFSM .92 IN 12.44

02035000 JAMES RIVER AT CARTERSVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°40'15", long 78°05'10", Goochland County, Hydrologic Unit 02080205, on left bank 200 ft (61 m) downstream from bridge on State Highway 45 between Pemberton and Cartersville, 1.8 mi (2.9 km) downstream from Willis River, and at mile 156.4 (251.6 km).

DRAINAGE AREA.--6,257 mi² (16,206 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1203: 1901-2(M), 1923-25(M), 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 163.90 ft (49.957 m) National Geodetic Vertical Datum of 1929. Prior to June 4, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Moderate diurnal fluctuation caused by powerplants above station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 7,053 ft³/s (199.7 m³/s), 15.31 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362,000 ft³/s (10,300 m³/s) June 22, 1972, gage height, 37.87 ft (11.543 m), from floodmarks, from rating curve extended above 160,000 ft³/s (4,500 m³/s) on basis of slope-conveyance study; minimum, 316 ft³/s (8.95 m³/s) Sept. 13, 14, 1966, gage height, 0.02 ft (0.006 m); minimum daily, 330 ft³/s (9.35 m³/s) Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40,000 ft³/s (1,100 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 5	0230	55500	1570	17.27	5.264
June 15	0300	*76000	2150	20.91	6.373

Minimum discharge, 652 ft³/s (18.5 m³/s) Oct. 8; minimum gage height, 0.37 ft (0.113 m) Oct. 8, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	996	4750	1540	6040	8430	7570	7290	11500	5740	4080	3710	2150
2	1050	3390	1580	8180	14700	7300	6810	9530	6460	4080	3050	1550
3	940	2890	1900	6580	32400	8460	6480	8130	6420	3540	2870	1740
4	796	2730	2040	8580	53700	9380	6690	7270	13500	3480	2710	1700
5	762	2380	2230	16000	50700	10400	6740	6380	25600	3520	2340	1810
6	714	2180	2290	21300	31000	10400	6550	5830	24600	6530	2630	1540
7	697	2280	2500	16800	21700	10500	6460	5230	13600	5050	2640	1280
8	672	2060	2230	11400	15600	16500	5970	4880	10400	4160	3480	1520
9	728	1980	2080	9240	12700	20400	5970	4410	8000	3940	3330	1510
10	723	1820	1830	7860	11600	18200	6380	3970	7130	4430	3850	1510
11	773	1720	2080	6070	9550	15000	5730	3980	16000	4180	4440	1500
12	771	1720	1620	5080	9610	12600	5820	3670	19600	5470	5820	1540
13	733	1560	1780	4510	8900	10600	5440	3430	20400	4250	5040	1450
14	856	1360	1450	3940	8840	9870	4960	3100	63700	4030	4220	1530
15	826	1510	2290	4680	8010	9330	4750	2950	67300	4190	2740	1360
16	1060	1510	7500	4390	7220	9500	4490	2730	32500	4040	3160	1520
17	1010	1470	7580	4250	8630	12700	4530	2590	21800	4020	3600	1550
18	977	1360	6040	3800	19200	17400	4850	2570	17900	3250	3610	1450
19	1130	1310	5240	3480	28400	17000	5200	2580	14000	2820	4560	1380
20	1050	1360	4170	3340	27100	18400	5240	2520	10600	2800	3270	1450
21	1060	1330	3290	3710	20700	26500	5640	2940	8520	3460	3120	1370
22	1220	1280	3120	4090	16400	31600	5420	2710	7440	3380	2330	1600
23	1130	1420	3460	4480	13300	25600	5220	2750	6490	3090	1940	1620
24	1090	1360	3910	6030	11500	19800	4790	3880	5880	4890	2080	1670
25	1300	1480	4610	6960	10200	16300	4430	2940	5260	6170	2280	1630
26	1740	1380	8310	6040	8760	13800	4250	3360	4860	3370	1660	1660
27	3610	1580	8150	5750	8090	11600	7490	3030	4790	3060	1810	2270
28	17300	1640	6390	5080	7840	10200	11500	9650	4310	3000	1810	3290
29	12900	1470	5310	4610	---	8820	15100	13500	4420	2750	2040	3080
30	10800	1440	4700	4490	---	8110	14900	6650	3810	2810	1810	2370
31	6760	---	4100	4920	---	7560	---	6390	---	2940	1630	---
TOTAL	76174	55720	115320	211680	484780	431400	195090	155050	461030	120780	93580	51600
MEAN	2457	1857	3720	6828	17310	13920	6503	5002	15370	3896	3019	1720
MAX	17300	4750	8310	21300	53700	31600	15100	13500	67300	6530	5820	3290
MIN	672	1280	1450	3340	7220	7300	4250	2520	3810	2750	1630	1280
CFSM	.39	.30	.60	1.09	2.77	2.23	1.04	.80	2.46	.62	.48	.28
IN.	.45	.33	.69	1.26	2.88	2.56	1.16	.92	2.74	.72	.56	.31

CAL YR 1981 TOTAL 1176857 MEAN 3224 MAX 26200 MIN 672 CFSM .52 IN 7.00
WTR YR 1982 TOTAL 2452204 MEAN 6718 MAX 67300 MIN 672 CFSM 1.07 IN 14.58

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to January 1976, October 1980 to May 1981.
WATER TEMPERATURES: April 1968 to January 1976, October 1980 to May 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to May 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT												
07...	1100	700	263	8.1	18.0	.70	8.8	10	K2800	77	23	4.6
JAN												
27...	1230	5840	210	7.8	.0	4.5	15.0	2100	74	76	23	4.6
APR												
01...	0915	7130	136	7.5	12.5	5.4	10.3	15	15	51	15	3.3
MAY												
14...	0830	3340	155	8.8	21.5	2.7	8.4	18	87	54	16	3.5
JUL												
13...	0815	4460	121	7.3	27.0	31	7.4	540	920	42	12	3.0
AUG												
17...	0915	3640	145	7.8	26.0	26	74.0	K5	2800	49	14	3.3

K Result based on colony count outside optimal range.

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
OCT												
07...	18	3.0	68	16	27	.1	5.4	165	138	.18	.160	.42
JAN												
27...	9.5	2.0	61	16	14	<.1	5.9	127	112	.40	.050	<.10
APR												
01...	5.1	1.4	44	12	5.2	<.1	6.4	101	75	.32	.120	.43
MAY												
14...	5.9	1.4	51	9.0	6.1	<.1	4.2	80	77	<.10	.020	.44
JUL												
13...	5.1	1.4	39	10	6.5	<.1	6.7	81	68	.35	.030	.50
AUG												
17...	6.5	2.8	42	10	8.1	.2	8.8	--	79	.48	.020	.80

< Actual value is known to be less than the value shown.

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
OCT											
07...	.090	.050	.050	1	2	100	40	3	3	20	10
JAN											
27...	.120	.090	.080	1	1	100	38	1	<1	<10	<10
APR											
01...	.030	.030	.030	--	--	--	--	--	--	--	--
MAY											
14...	.090	.060	.040	2	1	<100	34	2	<1	20	10
JUL											
13...	.120	.030	.040	1	1	<100	36	1	<1	10	<10
AUG											
17...	.140	.050	.050	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
OCT											
07...	2	2	9	2	230	53	2	<1	20	11	.3
JAN											
27...	<1	<1	7	3	340	6	<1	<1	20	10	.1
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	<1	<1	3	2	320	91	4	4	40	15	.1
JUL											
13...	13	3	15	9	2000	120	7	2	80	2	.3
AUG											
17...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
07...	.3	4	4	<1	<1	<1	<1	40	<4	2	100
JAN											
27...	<.1	<1	<1	<1	<1	<1	<1	70	6	10	67
APR											
01...	--	--	--	--	--	--	--	--	--	11	89
MAY											
14...	.2	7	7	<1	<1	<1	<1	110	<3	11	96
JUL											
13...	<.1	4	3	<1	<1	<1	<1	30	<4	51	97
AUG											
17...	--	--	--	--	--	--	--	--	--	57	96

< Actual value is known to be less than the value shown.

02036500 FINE CREEK AT FINE CREEK MILLS, VA

LOCATION.--Lat 37°35'52", long 77°49'12", Powhatan County, Hydrologic Unit 02080205, on right bank 75 ft (23 m) downstream from bridge on State Highway 711 at Fine Creek Mills, 0.8 mi (1.3 km) upstream from mouth, and 6.7 mi (10.8 km) northeast of Powhatan.

DRAINAGE AREA.--22.1 mi² (57.2 km²).

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1203: 1948. WSP 1303: 1945(M). WSP 1383: 1954. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 156.59 ft (47.729 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1953, nonrecording gage and crest-stage gage at site 75 ft (23 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--38 years, 20.0 ft³/s (0.566 m³/s), 12.29 in/yr (312 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s (118 m³/s) Oct. 6, 1972, gage height, 9.02 ft (2.749 m), from rating curve extended above 2,600 ft³/s (74 m³/s); minimum daily, 0.08 ft³/s (0.002 m³/s) Oct. 1, 1968; minimum gage height, 1.53 ft (0.466 m) Sept. 30, Oct. 1, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 270 ft³/s (7.65 m³/s) at 2130 hours Mar. 20, gage height, 3.09 ft (0.942 m), no other peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.60 ft³/s (0.017 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	4.8	4.8	45	105	31	19	12	11	12	7.7	3.2
2	.90	4.6	6.8	36	63	31	16	11	9.5	9.5	4.8	3.0
3	.90	4.6	8.6	20	79	45	16	9.5	9.5	5.9	4.6	2.5
4	1.6	4.1	9.5	45	93	47	18	8.6	91	6.8	4.3	2.2
5	2.3	4.1	12	67	49	51	14	6.8	157	9.5	5.9	2.0
6	1.6	4.6	9.5	25	33	45	15	5.9	109	6.8	7.7	1.8
7	1.2	4.3	6.8	15	24	59	15	5.9	36	4.6	12	1.5
8	.95	3.9	5.0	10	19	91	13	5.9	20	4.3	10	1.4
9	.95	3.2	4.8	8.6	19	49	18	6.8	14	4.1	8.6	1.5
10	.95	3.0	4.3	5.0	20	33	21	5.0	13	4.3	9.5	1.5
11	.95	3.2	4.1	3.7	18	26	16	4.6	13	9.5	8.6	1.4
12	.95	3.5	4.1	3.5	14	24	14	4.6	12	6.8	9.5	1.8
13	.95	3.5	4.1	3.5	16	21	13	4.6	21	5.0	5.9	1.8
14	.99	3.2	5.9	3.6	19	19	13	4.3	47	4.8	4.6	1.4
15	.94	3.5	33	3.8	19	22	11	4.6	24	4.6	5.9	1.3
16	.99	3.5	61	3.9	20	40	11	4.3	15	4.6	10	1.3
17	.96	4.6	36	4.1	53	51	12	4.3	13	4.3	38	1.3
18	1.3	6.8	20	4.3	106	34	31	4.3	10	4.1	14	1.3
19	2.8	5.9	13	4.5	65	26	18	6.8	8.6	3.5	9.5	1.4
20	2.7	4.8	7.7	4.8	41	123	11	16	7.7	2.8	11	1.5
21	2.8	4.3	4.8	6.8	33	154	12	10	7.7	3.0	13	1.8
22	2.7	4.1	10	7.7	26	55	11	8.6	5.9	2.5	5.9	3.9
23	3.6	3.7	16	7.7	21	33	10	9.5	5.0	3.9	4.3	9.5
24	4.3	4.8	12	8.6	19	25	9.5	11	4.3	14	3.9	7.7
25	8.3	6.8	24	6.8	16	22	9.5	20	4.3	13	3.2	4.1
26	17	7.7	36	5.0	14	24	20	15	4.6	6.8	2.7	10
27	49	5.9	20	4.6	14	21	31	11	4.6	4.6	2.7	28
28	91	5.0	13	4.3	24	19	33	9.5	8.6	4.6	4.8	16
29	33	4.6	8.6	4.8	---	16	22	9.5	7.7	14	6.8	6.8
30	13	4.6	6.8	6.8	---	16	15	19	7.7	12	4.6	4.1
31	7.7	---	7.7	18	---	16	---	16	---	9.5	3.9	---
TOTAL	258.27	135.2	419.9	397.4	1042	1269	488.0	274.9	701.7	205.7	247.9	127.0
MEAN	8.33	4.51	13.5	12.8	37.2	40.9	16.3	8.87	23.4	6.64	8.00	4.23
MAX	91	7.7	61	67	106	154	33	20	157	14	38	28
MIN	.90	3.0	4.1	3.5	14	16	9.5	4.3	4.3	2.5	2.7	1.3
CFSM	.38	.20	.61	.58	1.68	1.85	.74	.40	1.06	.30	.36	.19
IN.	.43	.23	.71	.67	1.75	2.14	.82	.46	1.18	.35	.42	.21

CAL YR 1981 TOTAL 3177.92 MEAN 8.71 MAX 91 MIN .50 CFSM .39 IN 5.35
WTR YR 1982 TOTAL 5566.97 MEAN 15.3 MAX 157 MIN .90 CFSM .69 IN 9.37

02037000 JAMES RIVER AND KANAWHA CANAL NEAR RICHMOND, VA

LOCATION.--Lat 37°33'52", long 77°34'28", Henrico County, Hydrologic Unit 02080205, on left bank 75 ft (23 m) downstream from Canal bridge, 400 ft (122 m) downstream from head gates, 1,200 ft (366 m) north of north end of Bosher Dam on James River, 1.6 mi (2.6 km) upstream from Huguenot Memorial Bridge, and 2.0 mi (3.2 km) west of city limits of Richmond.

PERIOD OF RECORD.--September 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 106.07 ft (32.330 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, at datum 3.06 ft (0.933 m) higher.

REMARKS.--Records good except those for period of no gage-height record, July 9 to Sept. 30, which are poor. Canal diverts from James River 1,200 ft (366 m) above Bosher Dam and discharges into river at several points below gaging station near Richmond. Above 2,540 ft^3/s (71.9 m^3/s), gage height, 14.5 ft (4.42 m), there is interchange of flow with James River; discharge above 2,540 ft^3/s (71.9 m^3/s) included in discharge for James River near Richmond (station 02037500). Figures given show flow in canal only. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 785 ft^3/s (22.23 m^3/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 29.1 ft (8.87 m) June 23, 1972, from floodmarks, interchange of flow with James River makes maximum discharge indeterminate; no flow at times when head gates were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft^3/s (50.4 m^3/s) June 15, gage height, 12.20 ft (3.719 m); minimum daily, 0.60 ft^3/s (0.017 m^3/s) Aug. 23 to Sept. 30, result of seepage around closed head gates.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	682	876	730	859	934	838	816	936	761	675	5.8	.60
2	680	819	731	946	988	834	806	874	752	678	5.6	.60
3	307	794	741	930	956	858	798	842	765	666	5.4	.60
4	36	777	756	912	946	896	788	812	894	657	5.2	.60
5	34	768	762	978	946	914	816	792	1170	648	5.0	.60
6	33	643	768	978	901	923	786	756	1260	52	4.8	.60
7	33	594	769	1030	914	888	774	743	1020	20	4.2	.60
8	33	598	771	1030	905	912	770	721	912	27	4.0	.60
9	32	594	762	1010	896	925	759	721	852	10	3.8	.60
10	466	590	754	966	894	916	763	691	806	9.2	3.6	.60
11	655	587	743	914	877	912	761	689	866	8.2	3.4	.60
12	572	410	752	766	879	910	745	689	1040	8.2	3.0	.60
13	603	130	737	809	872	907	738	685	1020	8.2	2.8	.60
14	612	492	747	823	866	890	723	673	1390	8.0	2.6	.60
15	599	492	760	815	852	877	707	662	1740	8.0	2.4	.60
16	594	562	872	754	828	881	705	658	1520	8.0	2.2	.60
17	596	731	964	773	858	918	693	646	1140	8.0	2.0	.60
18	576	724	912	794	943	929	703	644	1050	8.0	1.5	.60
19	580	716	872	792	947	925	72	649	976	8.0	1.0	.60
20	594	716	842	790	940	923	30	651	905	8.0	.80	.60
21	592	716	796	804	936	936	29	653	826	7.9	.80	.60
22	596	715	792	834	934	945	29	666	765	7.8	.80	.60
23	599	715	796	840	923	929	33	657	748	7.7	.60	.60
24	592	722	807	861	914	934	188	675	752	7.6	.60	.60
25	576	722	842	946	912	932	705	698	734	7.4	.60	.60
26	670	728	904	906	870	929	705	684	712	7.2	.60	.60
27	766	728	954	889	846	914	748	676	711	7.0	.60	.60
28	986	735	912	862	844	910	858	694	694	6.8	.60	.60
29	1070	737	868	813	---	874	965	976	693	6.4	.60	.60
30	1030	728	842	821	---	844	1000	820	691	6.2	.60	.60
31	960	---	823	849	---	776	---	780	---	6.0	.60	---
TOTAL	16754	19859	25081	27094	25321	27899	19013	22513	28165	3600.8	76.10	18.00
MEAN	540	662	809	874	904	900	634	726	939	116	2.45	.60
MAX	1070	876	964	1030	988	945	1000	976	1740	678	5.8	.60
MIN	32	130	730	754	828	776	29	644	691	6.0	.60	.60

CAL YR 1981 TOTAL 223923.00 MEAN 613 MAX 1070 MIN 20
WTR YR 1982 TOTAL 215393.90 MEAN 590 MAX 1740 MIN .60

02037500 JAMES RIVER NEAR RICHMOND, VA

LOCATION.--Lat 37°33'47", long 77°32'50", Henrico County, Hydrologic Unit 02080205, on left bank 0.1 mi (0.2 km) upstream from Huguenot Memorial Bridge, 0.5 mi (0.8 km) west of city limits of Richmond, 1.7 mi (2.7 km) downstream from Bosher Dam, 3.3 mi (5.3 km) upstream from Powhite Creek, and at mile 116.60 (187.61 km).

DRAINAGE AREA.--6,758 mi² (17,503 km²).

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayo's Bridge, at mile 109.5 (176.2 km), 1876-1956, and at mile 108.7 (174.9 km) since 1957, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Control is Williams Island dams which divert flow for city of Richmond water supply. Datum of gage is 98.82 ft (30.120 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. City of Richmond takes from 40 ft³/s (1.13 m³/s) to 90 ft³/s (2.55 m³/s) for water supply from river below gage except during periods of low flow when supply is obtained from James River and Kanawha Canal. Flow regulated by powerplants above station. Above 18.2 ft (5.55 m) stage there is interchange of flow with James River and Kanawha Canal. Records of daily discharge include diversion by city of Richmond but do not include flow in James River and Kanawha Canal (station 02037000) which diverts around station. National Weather Service telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--48 years, 7,504 ft³/s (212.5 m³/s), 15.08 in/yr (383 mm/yr), includes flow in James River and Kanawha Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 313,000 ft³/s (8,860 m³/s), includes canal flow, June 23, 1972, gage height, 28.62 ft (8.723 m); minimum daily, about 10 ft³/s (0.28 m³/s) Sept. 8-15, 1966, Sept. 30, Oct. 5, 6, 1968, Oct. 8-10, 1970; minimum daily discharge of James River and James River and Kanawha Canal combined, 370 ft³/s (10.5 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Probable minimum daily discharge, since 1899, of James River and James River and Kanawha Canal combined, about 350 ft³/s (9.9 m³/s) in October 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50,000 ft³/s (1,400 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 5	1000	55200	1560	13.80	4.206
June 15	1700	*73400	2080	15.65	4.770

Minimum discharge, 166 ft³/s (4.70 m³/s) Oct. 12, gage height, 3.12 ft (0.951 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	5400	1220	5480	7750	8410	6990	11600	5860	3470	3310	2070
2	212	4300	1260	7690	12900	8210	6730	9350	5650	3550	3730	2350
3	415	3420	1290	7880	21000	8680	6570	8010	6210	3440	3160	1920
4	865	2980	1490	7140	50100	9840	6130	7050	10000	3080	3030	1860
5	815	2720	1720	13300	54400	10400	6570	6510	24400	3030	2870	1960
6	740	2430	1840	17300	37100	11000	6160	5810	28000	3890	2660	1940
7	715	2270	1940	18800	23500	11300	6000	5540	16300	6350	3390	1820
8	715	2170	2090	12400	17100	15000	5940	4870	10800	4430	3240	1440
9	715	2070	1940	9170	13600	18800	5970	4740	8610	3730	3860	1560
10	615	1960	1820	7690	12000	18900	5810	4220	6910	4430	3860	1640
11	212	1860	1620	6350	10400	15500	5860	4020	9340	4070	4430	1590
12	197	1760	1660	5160	9460	13400	5380	4040	18200	4670	5560	1540
13	228	1960	1460	4460	9250	11100	5430	3810	16900	5030	5920	1640
14	228	1790	1440	4120	9000	9910	5190	3500	44400	4200	5160	1460
15	244	1560	1540	4070	8820	9430	4930	3260	70400	4090	4250	1560
16	290	1460	3150	4120	8270	9610	4690	3130	45500	4330	4070	1420
17	440	1390	7260	5060	8750	10700	4480	2950	22400	4120	4820	1440
18	590	1340	6400	4740	14900	15300	4640	2850	17600	3860	4380	1520
19	590	1220	5320	3780	23400	16700	5210	2820	13900	3290	4380	1460
20	590	1140	4640	3570	28100	17000	5430	2950	10500	2920	4330	1360
21	615	1120	3830	3550	21800	25100	5840	2870	8340	3030	3600	1440
22	590	1090	3160	4070	17700	28400	5780	3160	7080	3390	3370	1420
23	690	1160	2980	4430	14600	27200	5560	3110	6290	3960	2690	1740
24	740	1060	3160	4740	12600	20500	5350	3160	5510	4150	2350	1660
25	765	1120	3760	7200	10500	16900	4380	4090	5030	6200	2380	1690
26	915	1140	6040	7290	8860	14100	4250	3470	4480	4540	2530	1690
27	1460	1160	8080	6910	7950	11900	4980	3550	4300	3390	2040	2200
28	7740	1220	6940	6210	8080	10000	8480	3730	3990	3130	2460	2640
29	12900	1290	5460	5970	---	8890	12600	14100	3830	3260	2480	3390
30	10900	1260	4740	5920	---	7820	14400	7660	3810	3000	2510	3110
31	7630	---	4330	6080	---	7440	---	6510	---	3050	2220	---
TOTAL	54589	56820	103580	214650	481890	427440	185730	156440	444540	121080	109040	54530
MEAN	1761	1894	3341	6924	17210	13790	6191	5046	14820	3906	3517	1818
MAX	12900	5400	8080	18800	54400	28400	14400	14100	70400	6350	5920	3390
MIN	197	1060	1220	3550	7750	7440	4250	2820	3810	2920	2040	1360
(*)	540	662	809	874	904	900	634	726	939	116	2.45	.60
MEAN‡	2301	2556	4150	7798	18110	14690	6825	5772	15760	4022	3520	1819
CFSM‡	.34	.38	.61	1.15	2.68	2.17	1.01	.85	2.33	.60	.52	.27
IN‡	.39	.42	.71	1.33	2.79	2.51	1.13	.98	2.60	.69	.60	.30

CAL YR 1981 TOTAL 1041460 MEAN 2853 MAX 20300 MIN 197 MEAN‡ 3467 CFSM‡ .51 IN‡ 6.97
WTR YR 1982 TOTAL 2410329 MEAN 6604 MAX 70400 MIN 197 MEAN‡ 7194 CFSM‡ 1.06 IN‡ 14.45

* Diversion, in cubic feet per second, by James River and Kanawha Canal.
‡ Adjusted for diversion.

02038000 FALLING CREEK NEAR CHESTERFIELD, VA

LOCATION.--Lat 37°26'37", long 77°31'21", Chesterfield County, Hydrologic Unit 02080206, on left bank at upstream side of bridge on State Highway 651, 0.8 mi (1.3 km) downstream from Licking Creek, 2.8 mi (4.5 km) upstream from Pocoshock Creek, and 4.7 mi (7.6 km) northwest of Chesterfield.

DRAINAGE AREA.--32.8 mi² (85.0 km²).

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WSP 1904: 1957(M), 1958-60.

GAGE.--Water-stage recorder. Datum of gage is 126.39 ft (38.524 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--27 years, 34.1 ft³/s (0.966 m³/s), 14.12 in/yr (359 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s (168 m³/s) Oct. 1, 1979, gage height, 15.32 ft (4.670 m), from floodmarks, from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-conveyance study; minimum, 0.01 ft³/s (<0.001 m³/s) Sept. 20, Oct. 3, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 220 ft³/s (6.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 7	2400	*464	13.1	7.87	2.399	Mar. 20	1915	257	7.28	6.51	1.984

Minimum discharge, 0.51 ft³/s (0.014 m³/s) Oct. 4; minimum gage height, 3.04 ft (0.927 m) Sept. 11, 12, 14-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	5.3	9.0	70	96	74	21	16	15	5.4	9.5	4.6
2	4.4	4.1	12	47	54	80	18	12	7.3	3.9	6.7	3.8
3	1.4	3.4	14	43	159	94	18	11	3.4	3.3	5.3	3.2
4	.55	3.0	18	76	137	79	28	10	37	3.8	3.9	2.6
5	.68	2.5	21	76	76	83	28	8.2	65	3.5	3.1	2.2
6	.64	5.0	18	41	57	71	30	6.7	35	3.4	2.7	1.8
7	.99	6.1	15	28	47	187	28	6.0	13	3.3	2.5	1.9
8	1.3	5.3	14	22	40	332	30	5.5	7.5	3.1	3.4	1.9
9	1.4	4.8	12	19	39	105	37	5.8	4.1	2.7	13	1.5
10	1.4	4.6	11	16	53	69	34	4.6	3.0	3.3	14	1.5
11	1.6	4.3	11	11	43	57	28	3.6	2.8	4.4	12	1.3
12	1.3	4.0	11	9.3	37	53	25	2.9	2.2	6.5	76	1.4
13	1.3	3.6	10	11	40	48	25	2.2	31	5.4	41	1.4
14	1.7	3.5	13	13	44	45	22	2.6	85	14	20	1.3
15	1.7	3.4	55	15	46	52	20	5.3	34	19	54	1.3
16	1.7	3.6	83	13	46	101	20	3.6	19	11	55	1.3
17	1.7	4.5	42	13	102	114	20	2.4	15	6.9	62	1.3
18	2.0	5.0	27	12	158	68	28	1.4	15	4.7	28	1.5
19	5.0	5.1	21	11	97	56	23	1.6	12	3.5	18	1.5
20	4.7	4.6	17	11	73	149	19	2.7	12	2.4	12	1.8
21	5.0	5.7	14	13	59	176	19	2.4	11	2.2	9.3	1.9
22	5.6	4.7	17	14	54	86	18	3.5	8.6	2.0	7.2	4.1
23	6.7	4.5	22	22	46	62	15	8.7	7.9	20	8.1	6.4
24	5.6	5.6	20	33	41	36	14	8.3	6.3	69	9.7	3.2
25	5.3	8.8	42	28	39	32	15	9.7	5.0	29	8.8	2.8
26	2.6	7.9	50	21	35	30	29	6.9	4.4	14	5.9	19
27	3.9	7.9	32	25	40	26	45	4.4	4.1	9.3	4.8	63
28	26	8.6	24	15	61	24	33	4.1	3.9	7.9	23	25
29	22	7.4	21	16	---	23	24	3.1	3.2	25	16	13
30	12	8.3	18	20	---	21	19	8.1	3.5	22	9.4	8.9
31	7.5	---	18	41	---	21	---	10	---	13	6.3	---
TOTAL	140.86	155.1	712.0	805.3	1819	2454	733	183.3	476.2	326.9	550.6	186.4
MEAN	4.54	5.17	23.0	26.0	65.0	79.2	24.4	5.91	15.9	10.5	17.8	6.21
MAX	26	8.8	83	76	159	332	45	16	85	69	76	63
MIN	.55	2.5	9.0	9.3	35	21	14	1.4	2.2	2.0	2.5	1.3
CFSM	.14	.16	.70	.79	1.98	2.42	.74	.18	.49	.32	.54	.19
IN.	.16	.18	.81	.91	2.06	2.78	.83	.21	.54	.37	.62	.21

CAL YR 1981 TOTAL 5008.18 MEAN 13.7 MAX 140 MIN .55 CFSM .42 IN 5.68
WTR YR 1982 TOTAL 8542.66 MEAN 23.4 MAX 332 MIN .55 CFSM .71 IN 9.69

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA
(Hydrologic bench-mark station)

LOCATION.--Lat 37°24'55", long 78°38'10", Appomattox County, Hydrologic Unit 02080207, on right bank 350 ft (110 m) downstream from culvert on State Highway 614, 1.0 mi (1.6 km) upstream from Holiday Lake, and 5.2 mi (8.4 km) southwest of Andersonville.

DRAINAGE AREA.--8.53 mi² (22.09 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1966 to current year.

REVISED RECORDS.--WDR VA-72: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 472.97 ft (144.161 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Recording rain gage at station.

AVERAGE DISCHARGE.--16 years, 9.28 ft³/s (0.263 m³/s), 14.77 in/yr (375 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s (273 m³/s) June 21, 1972, gage height, 14.64 ft (4.462 m), from high-water mark in gage house, from rating curve extended above 4,200 ft³/s (120 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 11, 12, 1966; minimum gage height, 0.75 ft (0.229 m) July 28, 1966, June 29, 30, July 1, Aug. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s (4.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1300	296	8.38	3.57	1.088
Feb. 3	1015	545	15.4	4.86	1.481
June 4	0100	*753	21.3	5.67	1.728

Minimum discharge, 0.84 ft³/s (0.024 m³/s) Oct. 1, gage height, 0.81 ft (0.247 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	2.9	2.6	15	21	7.1	8.0	6.5	4.1	4.0	3.5	2.3
2	1.0	2.7	3.4	7.2	18	8.7	6.5	6.3	3.9	3.7	3.0	2.2
3	.98	2.6	3.2	13	205	13	8.8	6.1	33	4.2	2.7	2.1
4	.99	2.6	3.2	41	30	11	8.3	5.6	145	5.2	2.5	1.8
5	.97	2.5	3.6	15	14	15	7.1	5.4	147	6.6	2.7	1.7
6	.97	2.6	3.0	7.9	9.6	15	8.0	5.3	18	4.7	3.0	1.7
7	1.3	2.3	2.8	6.1	8.2	31	6.7	5.1	9.9	4.0	3.0	1.7
8	1.1	2.2	2.6	5.1	7.0	22	6.4	5.0	7.5	3.9	3.5	1.7
9	1.0	2.2	2.4	4.6	7.4	12	8.3	4.8	6.6	3.8	6.7	1.9
10	1.1	2.3	2.4	4.2	7.6	9.1	7.3	4.5	30	4.0	4.4	1.8
11	1.2	2.3	2.3	4.4	6.2	8.2	6.6	4.3	25	4.5	3.1	1.8
12	1.1	2.3	2.3	4.4	5.5	7.6	6.3	4.2	12	5.8	4.1	1.7
13	1.1	2.3	2.8	4.6	6.0	7.0	6.1	4.1	22	4.2	3.1	1.6
14	1.1	2.3	3.4	4.7	6.0	6.5	5.9	4.1	14	4.0	2.9	1.6
15	1.1	2.4	25	4.5	5.6	9.5	5.7	3.7	9.1	4.1	2.8	1.7
16	1.1	2.4	16	4.6	6.7	14	5.7	3.7	7.5	3.8	2.7	2.1
17	1.1	2.4	7.8	4.8	20	13	6.9	3.6	7.6	3.6	3.9	2.5
18	1.1	2.2	5.7	4.5	17	9.1	8.4	3.5	6.8	3.3	8.1	1.8
19	1.1	2.2	4.7	4.3	12	8.1	6.2	3.6	6.2	3.1	3.7	1.7
20	1.1	2.1	4.6	4.5	9.4	18	6.0	4.2	5.6	3.1	3.0	1.8
21	1.1	2.0	4.5	8.2	7.9	13	5.9	6.3	5.2	4.7	2.7	1.9
22	1.1	2.0	5.1	5.7	6.7	9.9	5.5	4.8	5.1	3.2	2.5	2.0
23	1.6	2.0	6.1	5.6	6.2	8.3	5.3	10	5.0	6.2	2.5	1.8
24	1.9	2.6	5.0	4.5	5.9	7.6	5.2	6.0	4.6	7.6	2.4	1.7
25	1.7	2.9	13	4.4	5.5	7.2	5.1	5.4	4.6	4.1	2.3	1.7
26	11	2.9	9.5	3.6	5.2	9.9	16	4.7	4.6	3.5	2.1	5.0
27	76	2.8	6.1	3.6	6.8	7.4	15	4.6	4.6	3.2	2.4	5.0
28	13	2.5	4.8	4.0	9.4	6.7	10	5.4	4.8	3.0	3.2	2.5
29	5.2	2.3	4.2	4.0	---	6.4	7.9	5.2	4.4	2.9	2.3	2.2
30	3.7	2.2	3.7	4.4	---	6.4	7.0	6.1	4.2	3.4	2.2	2.1
31	3.2	---	5.2	8.5	---	6.7	---	4.6	---	3.7	2.2	---
TOTAL	140.93	72.0	171.0	220.9	475.8	334.4	222.1	156.7	567.9	129.1	99.2	63.1
MEAN	4.55	2.40	5.52	7.13	17.0	10.8	7.40	5.05	18.9	4.16	3.20	2.10
MAX	76	2.9	25	41	205	31	16	10	147	7.6	8.1	5.0
MIN	.92	2.0	2.3	3.6	5.2	6.4	5.1	3.5	3.9	2.9	2.1	1.6
CFSM	.53	.28	.65	.84	1.99	1.27	.87	.59	2.22	.49	.38	.25
IN.	.61	.31	.75	.96	2.07	1.46	.97	.68	2.48	.56	.43	.28

CAL YR 1981 TOTAL 1293.32 MEAN 3.54 MAX 76 MIN .63 CFSM .42 IN 5.64
WTR YR 1982 TOTAL 2653.13 MEAN 7.27 MAX 205 MIN .92 CFSM .85 IN 11.57

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 14...	0915	1.0	40	7.2	7.0	12.0	K10	330	12	2.9	1.1	2.5
DEC 15...	0945	11	36	7.2	2.5	14.2	370	1100	11	2.6	1.0	2.4
MAR 02...	1030	7.2	29	6.8	3.0	13.4	36	12	9	1.7	1.1	2.3
MAY 04...	0915	5.7	34	7.3	12.0	10.2	12	81	10	2.2	1.0	2.8
JUN 29...	1015	4.6	32	7.3	20.5	8.7	88	220	10	2.3	1.0	2.5
AUG 31...	0915	2.2	36	7.4	18.0	9.0	68	270	11	2.7	1.1	2.8

K Result based on colony count outside optimal range.

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)
OCT 14...	.8	15	1.9	1.5	14	48	34	.14	.14	.100	.080	.35
DEC 15...	.7	13	4.0	1.8	12	40	32	.10	.08	.040	.010	.28
MAR 02...	.5	10	3.1	1.6	9.7	32	26	.06	.03	.010	.010	<.10
MAY 04...	.4	13	3.0	1.5	11	20	30	<.10	<.10	.050	.060	.52
JUN 29...	1.6	14	2.0	2.0	13	32	33	<.10	<.10	.020	.010	<.10
AUG 31...	.2	15	3.0	1.1	14	36	34	<.10	<.10	.020	.030	.20

< Actual value is known to be less than the value shown.

DATE	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
OCT 14...	.20	.020	<.010	--	--	--	--	--	--	--	--	--
DEC 15...	.28	.030	.020	1	<1	<100	11	<1	1	<1	10	<1
MAR 02...	<.10	<.010	<.010	--	--	--	--	--	--	--	--	--
MAY 04...	.12	.020	<.010	--	--	--	--	--	--	--	--	--
JUN 29...	--	.020	<.010	1	<1	<100	20	<1	1	<1	10	<1
AUG 31...	--	.020	.010	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
15...	<3	5	<10	720	270	<1	<10	<4	30	15	.1	.1
MAR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
29...	<3	4	<10	680	180	<1	<10	<4	40	7	.6	.6
AUG												
31...	--	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)
OCT												
14...	--	--	--	--	--	--	--	--	--	<.8	<.4	1.5
DEC												
15...	20	<1	<1	<1	<1	20	<6.0	50	9	--	--	--
MAR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
29...	<10	<1	<1	<1	<1	21	<6.0	220	<4	--	--	--
AUG												
31...	--	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
14...	<.4	1.4	<.4	.06	<.01	3.6	--	--	--	8	54
DEC											
15...	--	--	--	--	--	--	9.4	.5	<.01	21	83
MAR											
02...	--	--	--	--	--	1.5	--	--	--	1	100
MAY											
04...	--	--	--	--	--	2.3	--	--	--	6	78
JUN											
29...	--	--	--	--	--	--	--	--	<.01	5	73
AUG											
31...	--	--	--	--	--	--	2.8	--	--	3	79

< Actual value is known to be less than the value shown.

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN												
29...	1015	<.10	<1	<1.0	<.01	<.1	<.10	<1.0	<.01	<.1	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDO-SULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN												
29...	<.01	<.1	<.01	<.01	.1	<.01	<.1	<.01	<.1	<.01	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN											
29...	<.01	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PER-THANE IN BOTTOM MATERIL (UG/KG)	SILVEX, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
JUN											
29...	<.10	<.01	<.10	<1.00	<.01	<1	<10	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

02039000 BUFFALO CREEK NEAR HAMPDEN SYDNEY, VA

LOCATION.--Lat 37°15'25", long 78°29'12", Prince Edward County, Hydrologic Unit 02080207, on left bank 100 ft (30 m) upstream from bridge on State Highway 658, 0.8 mi (1.3 km) upstream from Locket Creek, 2.0 mi (3.2 km) northwest of Hampden Sydney, and 6.0 mi (9.7 km) southwest of Farmville.

DRAINAGE AREA.--69.7 mi² (180.5 km²).

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1303: 1948-50(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 339.19 ft (103.385 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 19, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 66.4 ft³/s (1.880 m³/s), 12.94 in/yr (329 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,160 ft³/s (259 m³/s) June 21, 1972, gage height, 12.38 ft (3.773 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of slope-area measurement at gage height 11.96 ft (3.645 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Oct. 7, 8, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 15 ft (4.6 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 28	0030	568	16.1	5.82	1.774	May 29	0630	592	16.8	5.88	1.792
Jan. 4	2100	832	23.6	6.32	1.926	June 5	1230	592	16.8	5.88	1.792
Feb. 3	2100	*1200	34.0	6.93	2.112						

Minimum discharge, 11 ft³/s (0.31 m³/s) Oct. 1, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	47	21	128	255	73	48	38	134	27	31	20
2	14	40	24	89	130	93	45	37	89	24	26	19
3	14	36	24	140	508	164	49	39	82	23	24	17
4	13	34	24	427	560	142	48	36	358	34	22	16
5	13	31	26	408	316	123	43	36	462	165	21	14
6	13	33	23	172	200	110	45	32	230	158	32	14
7	13	26	22	104	125	162	42	31	114	83	37	14
8	12	24	21	73	91	275	41	30	82	58	28	14
9	12	24	21	57	76	147	49	29	70	46	34	15
10	12	24	20	54	69	104	47	27	70	58	34	15
11	13	23	20	52	61	85	45	26	77	52	32	15
12	13	22	20	48	55	75	43	25	67	82	66	14
13	13	22	22	46	57	69	42	25	112	76	44	15
14	14	22	24	43	56	63	41	24	125	74	35	15
15	15	21	88	40	52	63	40	23	83	64	30	15
16	15	21	166	40	55	70	39	22	67	54	27	14
17	15	21	103	40	142	76	42	21	64	45	25	15
18	15	21	71	41	284	68	54	21	63	39	36	13
19	16	20	54	42	158	63	48	21	57	34	30	13
20	16	21	51	42	114	76	43	23	51	32	26	19
21	16	22	46	43	90	77	43	27	46	43	23	19
22	16	20	42	47	73	71	40	27	43	38	21	23
23	18	19	51	47	66	63	38	54	40	41	20	19
24	22	24	47	44	63	58	36	46	36	45	20	17
25	24	28	131	42	57	55	35	70	34	35	19	17
26	63	25	168	36	51	63	49	43	32	30	19	28
27	270	24	94	35	55	57	57	36	31	28	19	45
28	415	23	65	35	70	52	51	111	30	26	23	31
29	176	21	52	34	---	49	45	432	29	24	20	27
30	88	21	45	36	---	48	40	364	29	27	18	23
31	57	---	42	81	---	48	---	209	---	29	18	---
TOTAL	1438	760	1628	2566	3889	2742	1328	1985	2807	1594	860	555
MEAN	46.4	25.3	52.5	82.8	139	88.5	44.3	64.0	93.6	51.4	27.7	18.5
MAX	415	47	168	427	560	275	57	432	462	165	66	45
MIN	12	19	20	34	51	48	35	21	29	23	18	13
CFSM	.67	.36	.75	1.19	1.99	1.27	.64	.92	1.34	.74	.40	.27
IN.	.77	.41	.87	1.37	2.08	1.46	.71	1.06	1.50	.85	.46	.30

CAL YR 1981 TOTAL 13386.0 MEAN 36.7 MAX 415 MIN 8.8 CFSM .53 IN 7.14
WTR YR 1982 TOTAL 22152.0 MEAN 60.7 MAX 560 MIN 12 CFSM .87 IN 11.82

02039500 APPOMATTOX RIVER AT FARMVILLE, VA

LOCATION.--Lat 37°18'25", long 78°23'20", Cumberland County, Hydrologic Unit 02080207, on left bank at downstream side of bridge on State Highway 45 at north town limits of Farmville and 1.1 mi (1.8 km) downstream from Buffalo Creek.

DRAINAGE AREA.--303 mi^2 (785 km^2).

PERIOD OF RECORD.--March 1926 to current year.

REVISED RECORDS.--WSP 972: 1927-37, 1938(M). WSP 1303: 1927(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 281.93 ft (85.932 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 29, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by Prince Edward Mill 0.2 mi (0.3 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 286 ft^3/s (8.100 m^3/s), 12.82 in/yr (326 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft^3/s (937 m^3/s) June 22, 1972, gage height, 29.70 ft (9.053 m), from floodmarks, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of contracted-opening measurement of peak flow; minimum, 3.8 ft^3/s (0.11 m^3/s) Sept. 25, 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft^3/s (54 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 28	1600	2700	76.5	13.58	4.139	Feb. 4	1330	*6770	192	17.52	5.340
Jan. 5	1230	2450	69.4	13.10	3.993	June 6	0330	4640	131	15.83	4.825

Minimum discharge, 37 ft^3/s (1.05 m^3/s) Oct. 9; minimum gage height, 3.37 ft (1.027 m) Oct. 1, 2, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	205	81	541	1050	301	213	160	371	104	105	79
2	43	176	93	553	770	379	202	150	256	84	93	81
3	43	152	103	553	1530	697	202	144	203	79	83	77
4	46	138	106	1540	5710	671	233	132	2200	98	75	71
5	44	130	113	2160	2040	525	204	120	3720	167	71	65
6	43	125	109	786	721	604	192	114	3530	352	193	63
7	41	115	99	409	480	703	191	109	694	228	464	62
8	40	92	93	288	355	1510	170	106	351	148	178	61
9	39	89	87	219	304	811	192	99	268	117	163	63
10	41	86	83	153	288	492	212	91	266	108	354	65
11	41	84	80	154	249	394	191	83	719	146	184	65
12	43	83	77	230	219	348	175	80	439	366	169	63
13	45	80	71	170	221	313	168	77	387	287	197	61
14	45	77	95	148	233	286	161	75	799	258	140	59
15	45	76	373	157	218	281	152	69	402	195	119	60
16	46	77	1050	140	224	365	146	64	264	153	109	60
17	47	78	579	144	559	473	153	59	225	131	105	72
18	47	77	352	135	1190	382	246	57	224	111	161	70
19	47	75	261	112	725	313	230	55	190	96	155	63
20	52	77	182	110	505	570	180	87	163	93	112	68
21	71	78	177	123	395	527	170	77	136	153	96	76
22	147	74	207	157	318	395	158	91	121	141	87	80
23	150	71	224	159	266	329	144	775	119	165	80	78
24	161	83	240	157	239	271	135	358	110	330	78	69
25	166	109	450	153	219	256	128	462	99	204	76	64
26	237	108	768	121	197	284	163	273	98	128	71	82
27	919	97	465	125	203	291	327	177	96	103	76	180
28	2270	92	304	145	263	244	287	318	99	94	142	157
29	808	85	240	150	---	223	222	606	97	91	119	101
30	371	79	198	170	---	212	179	792	93	90	85	86
31	258	---	182	290	---	209	---	674	---	95	78	---
TOTAL	6441	2969	7542	10452	19691	13659	5726	6534	16739	4915	4218	2301
MEAN	208	99.0	243	337	703	441	191	211	558	159	136	76.7
MAX	2270	205	1050	2160	5710	1510	327	792	3720	366	464	180
MIN	39	71	71	110	197	209	128	55	93	79	71	59
CFSM	.69	.33	.80	1.11	2.32	1.46	.63	.70	1.84	.53	.45	.25
IN.	.79	.36	.93	1.28	2.42	1.68	.70	.80	2.06	.60	.52	.28

CAL YR 1981 TOTAL 52911 MEAN 145 MAX 2270 MIN 33 CFSM .48 IN 6.50
WTR YR 1982 TOTAL 101187 MEAN 277 MAX 5710 MIN 39 CFSM .91 IN 12.42

02040000 APPOMATTOX RIVER AT MATTOAX, VA

LOCATION.--Lat 37°25'17", long 77°51'33", Amelia County, Hydrologic Unit 02080207, on right bank 75 ft (23 m) upstream from Southern Railway bridge at Mattoax, 0.3 mi (0.5 km) upstream from Skinquarter Creek, and 3.7 mi (6.0 km) upstream from Flat Creek.

DRAINAGE AREA.--726 mi² (1,880 km²).

PERIOD OF RECORD.--August 1900 to December 1905, March 1926 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 972: 1928, 1932, 1934-38. WSP 1303: 1901(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 174.51 ft (53.191 m) National Geodetic Vertical Datum of 1929. August 1900 to December 1905, nonrecording gage at same site, different datum. March 1926 to October 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Appomattox Water Authority gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--61 years, 720 ft³/s (20.39 m³/s), 13.47 in/yr (342 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) Aug. 18, 1940, gage height, 35.3 ft (10.76 m), from floodmark in gage house, from rating curve extended above 20,000 ft³/s (570 m³/s) on basis of records for stations at Farmville and near Petersburg; minimum, 11 ft³/s (0.31 m³/s) Oct. 2, 1930, gage height, 3.52 ft (1.073 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (110 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 7	2400	4280	121	19.13	5.831	June 8	0700	*4720	134	20.15	6.142

Minimum discharge, 67 ft³/s (1.90 m³/s) Oct. 9-10, gage height, 5.81 ft (1.771 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	472	187	1030	2190	721	515	429	2140	268	213	168
2	74	376	191	1740	2880	913	508	388	952	265	224	160
3	78	320	203	1490	2930	1560	496	360	644	247	229	158
4	73	280	222	2110	3090	2270	496	344	2700	238	207	156
5	75	260	246	3120	3300	2130	498	328	3930	284	196	146
6	75	250	250	3300	3570	1670	496	306	4240	400	181	138
7	74	238	248	3540	4060	1700	448	286	4530	630	256	133
8	72	227	229	2260	2630	2790	429	288	4700	436	610	128
9	68	209	214	892	970	2960	429	370	3310	314	422	127
10	68	192	202	710	859	2660	467	298	826	265	386	128
11	68	187	195	498	775	1230	482	265	748	250	450	129
12	69	182	188	316	689	958	453	248	1150	277	713	130
13	69	180	181	496	644	832	405	236	928	477	573	126
14	72	176	186	450	662	748	384	234	1320	708	376	124
15	74	172	349	430	691	713	368	225	1950	566	300	121
16	76	170	1500	410	678	928	354	217	1000	467	1000	119
17	76	175	2150	400	950	1410	348	208	680	350	407	116
18	78	185	1540	380	2380	1230	400	199	597	280	276	114
19	86	181	811	360	2820	928	472	195	694	247	336	118
20	85	176	582	340	2300	1190	501	220	563	221	356	126
21	88	174	424	350	1360	2070	414	247	472	218	262	127
22	96	172	370	400	1040	1420	384	265	405	280	218	157
23	106	170	496	420	808	1000	366	258	370	397	199	181
24	160	170	556	410	694	793	344	976	340	1410	185	176
25	182	192	766	380	627	694	328	976	316	838	175	157
26	218	224	1700	360	570	672	368	982	290	482	168	158
27	556	236	1920	350	544	726	525	743	552	314	168	227
28	1860	221	1170	350	570	680	732	448	544	256	208	280
29	2260	205	705	360	---	587	642	532	340	248	256	290
30	1990	195	563	450	---	544	513	1630	298	218	235	231
31	697	---	482	748	---	520	---	2390	---	212	192	---
TOTAL	9694	6567	19026	28850	45281	39247	13565	15091	41529	12063	9977	4649
MEAN	313	219	614	931	1617	1266	452	487	1384	389	322	155
MAX	2260	472	2150	3540	4060	2960	732	2390	4700	1410	1000	290
MIN	68	170	181	316	544	520	328	195	290	212	168	114
CFSM	.43	.30	.85	1.28	2.23	1.74	.62	.67	1.91	.54	.44	.21
IN.	.50	.34	.97	1.48	2.32	2.01	.70	.77	2.13	.62	.51	.24

CAL YR 1981 TOTAL 118024 MEAN 323 MAX 2260 MIN 68 CFSM .45 IN 6.05
WTR YR 1982 TOTAL 245539 MEAN 673 MAX 4700 MIN 68 CFSM .93 IN 12.58

02041000 DEEP CREEK NEAR MANNBORO, VA

LOCATION.--Lat 37°16'59", long 77°52'12", Amelia County, Hydrologic Unit 02080207, on left bank 300 ft (91 m) upstream from bridge on State Highway 153, 0.9 mi (1.4 km) upstream from Sweathouse Creek, 3.4 mi (5.5 km) northwest of Mannboro, and 7.5 mi (12.1 km) southeast of Amelia.

DRAINAGE AREA.--158 mi² (409 km²).

PERIOD OF RECORD.--September 1946 to current year.

REVISED RECORDS.--WSP 1203: 1948 (calendar year figures only). WSP 2104: Drainage area. WDR VA-79-1: 1973-76(P), 1978.

GAGE.--Water-stage recorder. Datum of gage is 177.20 ft (54.011 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 2, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, June 21 to Aug. 23, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 149 ft³/s (4.220 m³/s), 12.81 in/yr (325 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Oct. 6, 1972, gage height, 24.04 ft (7.327 m), from high-water mark, from rating curve extended above 3,900 ft³/s (110 m³/s); minimum, 0.03 ft³/s (<0.001 m³/s) Oct. 4, 5, 1968; minimum gage height, 0.29 ft (0.884 m) Aug. 9-12, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 14.8 ft (4.51 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s (33.1 m³/s) Mar. 8, gage height, 7.24 ft (2.207 m), no peak above base of 1,200 ft³/s (34 m³/s); minimum, 5.8 ft³/s (0.16 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	50	38	268	517	250	97	73	255	50	45	38
2	9.4	40	44	565	837	331	98	63	148	42	50	35
3	7.4	35	47	444	565	430	98	60	158	39	55	34
4	13	33	53	547	828	471	97	56	205	37	50	32
5	7.8	32	63	1050	804	302	91	52	484	40	45	30
6	7.8	34	56	748	333	236	88	47	729	54	37	29
7	9.4	35	54	264	204	334	82	43	484	80	50	28
8	11	34	50	168	160	855	78	44	169	140	142	28
9	12	33	44	134	141	851	88	43	113	110	110	27
10	11	32	40	102	143	336	99	40	95	47	80	27
11	10	30	37	98	136	214	98	36	109	50	90	27
12	15	29	35	80	122	180	88	33	105	54	170	26
13	12	29	33	67	121	159	83	32	145	88	140	26
14	12	27	35	66	143	143	77	34	458	170	90	26
15	11	27	108	65	156	142	75	33	677	124	60	26
16	13	29	339	64	152	185	70	30	281	100	230	27
17	13	33	517	63	197	240	70	28	136	80	120	31
18	14	55	246	62	428	209	87	26	148	70	55	29
19	15	55	132	61	598	163	95	24	176	60	65	29
20	20	50	93	60	334	215	85	26	136	50	87	29
21	23	42	98	64	236	476	77	30	112	42	80	29
22	23	36	78	78	183	396	74	35	87	60	70	40
23	23	33	98	110	150	214	69	56	68	90	58	55
24	29	35	109	100	133	166	65	150	61	350	57	57
25	39	48	154	85	120	144	62	430	45	200	50	46
26	71	53	317	74	110	133	73	600	53	130	47	44
27	97	55	365	68	108	120	116	364	89	80	45	94
28	167	50	189	65	144	111	135	138	100	66	74	117
29	197	44	138	68	---	105	111	105	80	56	64	82
30	121	39	109	72	---	100	86	146	61	48	48	49
31	73	---	93	191	---	97	---	190	---	42	41	---
TOTAL	1095.0	1157	3812	5951	8103	8308	2612	3067	5967	2649	2405	1197
MEAN	35.3	38.6	123	192	289	268	87.1	98.9	199	85.5	77.6	39.9
MAX	197	55	517	1050	837	855	135	600	729	350	230	117
MIN	7.4	27	33	60	108	97	62	24	45	37	37	26
CFSM	.22	.24	.78	1.22	1.83	1.70	.55	.63	1.26	.54	.49	.25
IN.	.26	.27	.90	1.40	1.91	1.96	.61	.72	1.40	.62	.57	.28

CAL YR 1981 TOTAL 24774.4 MEAN 67.9 MAX 1280 MIN 7.4 CFSM .43 IN 5.83
WTR YR 1982 TOTAL 46323.0 MEAN 127 MAX 1050 MIN 7.4 CFSM .80 IN 10.91

02041650 APPOMATTOX RIVER AT MATOACA, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°13'28", long 77°28'32", Chesterfield County, Hydrologic Unit 02080207, on left bank at upstream side of bridge on State Highway 600, 0.2 mi (0.3 km) south of Matoaca, 2.0 mi (3.2 km) upstream from Rohoic Creek, 2.8 mi (4.5 km) downstream from Lake Chesdin, 3.5 mi (5.6 km) west of Petersburg, and at mile 15.9 (25.6 km).

DRAINAGE AREA.--1,344 mi^2 (3,481 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 68.30 ft (20.818 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, May 30 to June 9, which are fair. Flow regulated by Appomattox Water Authority at Lake Chesdin, capacity, 36,500 acre-ft (45.0 hm^3), 2.8 mi (4.5 km) upstream, from which an average of 12.4 ft^3/s (0.35 m^3/s) is diverted for industrial and municipal use. Records do not include flow of Upper Appomattox Canal of city of Petersburg which diverts around station. National Weather Service gage-height telemeter at station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 1,517 ft^3/s (42.96 m^3/s), 15.33 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,800 ft^3/s (1,160 m^3/s) Oct. 7, 1972, gage height, 18.39 ft (5.605 m); minimum, 41 ft^3/s (1.16 m^3/s) Oct. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,380 ft^3/s (181 m^3/s) June 8, gage height, 7.86 ft (2.396 m), from high-water mark in well; minimum, 41 ft^3/s (1.16 m^3/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	869	338	1380	2490	1310	808	749	3800	469	429	358
2	165	577	342	2600	4320	1790	731	645	3500	405	386	325
3	104	465	373	3350	5430	2300	783	581	1500	413	368	313
4	47	421	377	3560	5940	3070	859	549	1000	439	347	286
5	52	380	433	4700	5730	3440	608	511	2000	409	324	263
6	107	411	424	5340	5320	3080	871	478	4800	451	336	254
7	196	358	403	5110	4890	2980	604	464	5200	541	395	232
8	146	304	455	4570	4870	5320	579	471	5500	631	556	213
9	112	313	389	2630	3070	5760	711	481	6000	535	765	211
10	100	307	356	1290	1590	5080	672	481	4180	474	693	207
11	100	295	316	982	1280	3540	747	439	1400	480	629	208
12	99	289	312	880	1090	2080	701	414	963	493	1230	209
13	98	279	310	800	1060	1540	674	403	1280	470	1870	205
14	84	282	330	700	1020	1300	623	384	2030	665	1310	198
15	83	270	507	650	1110	1180	591	367	2610	1320	1140	194
16	100	258	1300	587	1150	1430	576	357	2670	872	2230	206
17	90	294	2780	590	1420	2340	576	353	1500	651	2380	210
18	84	306	3340	580	2960	2480	695	329	1200	510	1570	256
19	135	307	2120	580	4320	2000	665	340	1050	436	1170	212
20	91	346	1140	570	4500	1820	738	355	965	397	872	94
21	92	328	782	580	3170	2860	727	353	771	377	635	144
22	100	283	642	620	1960	3420	649	424	625	360	486	256
23	125	282	671	700	1300	2420	606	446	551	512	440	284
24	172	306	746	750	1060	1690	564	513	485	1420	369	298
25	266	323	1020	700	911	1280	530	1590	451	2550	352	270
26	301	318	1990	660	732	1190	589	1730	438	1620	331	350
27	359	360	2980	640	763	1070	816	1770	505	794	314	450
28	939	380	2830	650	931	1010	1030	1130	824	531	472	500
29	2330	369	1730	660	---	935	1090	762	807	462	488	530
30	2920	341	1070	679	---	846	933	820	574	416	448	500
31	1990	---	852	850	---	809	---	2000	---	432	411	---
TOTAL	11677	10621	31658	48938	74387	71370	21346	20689	59179	20535	23746	8236
MEAN	377	354	1021	1579	2657	2302	712	667	1973	662	766	275
MAX	2920	869	3340	5340	5940	5760	1090	2000	6000	2550	2380	530
MIN	47	258	310	570	732	809	530	329	438	360	314	94

CAL YR 1981 TOTAL 185372 MEAN 508 MAX 3410 MIN 47
WTR YR 1982 TOTAL 402382 MEAN 1102 MAX 6000 MIN 47

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
NOV 05...	1130	375	87	7.8	15.5	3.9	9.8	K10	120	28	6.3	3.0
DEC 15...	0930	680	88	6.7	5.0	7.4	12.9	24	55	26	6.1	2.6
MAR 17...	1100	2360	62	6.9	12.0	34	12.0	K20	49	18	4.1	1.9
MAY 12...	1200	424	87	8.7	23.0	2.2	10.1	<3	470	26	5.9	2.7
JUL 08...	1115	655	81	8.3	28.0	3.9	8.4	47	460	29	6.8	3.0
AUG 31...	1330	411	70	6.3	25.0	4.4	8.0	K21	120	20	4.5	2.1

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
NOV 05...	5.9	2.4	31	5.3	4.9	.1	15	68	62	.08	.030	.29
DEC 15...	5.3	3.2	24	7.9	5.1	<.1	15	70	60	.15	.110	.40
MAR 17...	3.6	1.7	14	9.6	3.5	<.1	11	56	44	.18	.040	.41
MAY 12...	4.6	1.5	30	5.0	4.1	.1	12	62	54	<.10	.020	.31
JUL 08...	5.3	1.5	30	5.0	3.3	<.1	18	71	61	<.10	.020	.70
AUG 31...	3.5	2.1	23	4.0	3.6	.1	13	64	47	<.10	.010	.50

< Actual value is known to be less than the value shown.

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
NOV 05...	.010	.010	<.010	1	<1	100	23	2	<1	10	<10
DEC 15...	.030	.020	<.010	1	<1	100	24	1	1	20	10
MAR 17...	.060	.010	<.010	--	--	--	--	--	--	--	--
MAY 12...	.020	.010	<.010	2	1	<100	26	2	<1	20	10
JUL 08...	.030	.020	<.010	1	<1	<100	30	<1	<1	10	10
AUG 31...	.040	.030	<.010	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
NOV											
05...	<1	<1	6	1	330	63	3	1	60	7	.3
DEC											
15...	<1	<1	7	4	530	210	1	<1	60	12	<.1
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
12...	<1	<1	3	3	250	130	2	2	60	12	.3
JUL											
08...	<1	1	6	4	610	230	<1	1	90	10	<.1
AUG											
31...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV											
05...	.1	2	1	<1	<1	<1	<1	40	<4	5	97
DEC											
15...	<.1	1	1	<1	<1	<1	<1	50	<4	43	100
MAR											
17...	--	--	--	--	--	--	--	--	--	18	90
MAY											
12...	.2	5	5	<1	<1	<1	<1	40	<3	4	93
JUL											
08...	<.1	<1	1	<1	<1	<1	<1	20	<4	6	98
AUG											
31...	--	--	--	--	--	--	--	--	--	8	95

< Actual value is known to be less than the value shown.

02042500 CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA

LOCATION.--Lat 37°26'10", long 77°03'40", New Kent County, Hydrologic Unit 02080206, on left bank 100 ft (30 m) downstream from bridge on State Highway 618, 1.1 mi (1.8 km) southwest of Providence Forge, and 1.7 mi (2.7 km) downstream from Schiminoe Creek.

DRAINAGE AREA.--248 mi^2 (642 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1942 to current year.

REVISED RECORDS.--WSP 1553: 1956. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6.07 ft (1.850 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--40 years, 262 ft^3/s (7.420 m^3/s), 14.35 in/yr (364 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,710 ft^3/s (218 m^3/s) Aug. 15, 1955, gage height, 11.67 ft (3.557 m); minimum, 0.70 ft^3/s (0.020 m^3/s) July 7, 1977; minimum gage height, 1.53 ft (0.466 m) Sept. 13, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,140 ft^3/s (32.3 m^3/s) Mar. 11, gage height, 8.44 ft (2.573 m); minimum, 4.5 ft^3/s (0.13 m^3/s) Oct. 11, gage height, 1.82 ft (0.555 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	68	37	276	316	434	282	226	178	34	235	211
2	7.4	83	43	294	343	438	265	283	408	28	204	175
3	6.9	93	50	317	420	435	247	293	359	23	178	153
4	6.5	96	59	363	517	421	232	250	270	20	156	157
5	7.2	95	65	395	628	437	216	206	270	17	138	182
6	6.3	100	68	467	736	454	222	171	254	14	132	188
7	6.2	89	68	484	795	528	226	143	224	13	169	167
8	5.8	73	67	433	736	679	223	118	202	12	183	138
9	5.5	65	66	390	624	864	233	100	199	11	232	111
10	6.0	55	60	350	537	1030	241	84	400	11	290	86
11	5.2	50	52	280	438	1130	236	70	533	18	341	63
12	6.5	46	42	230	372	1030	227	60	498	38	492	46
13	6.9	41	38	180	337	839	211	51	420	70	369	35
14	8.0	38	40	146	325	640	197	43	372	98	393	28
15	8.3	37	98	127	327	508	188	37	324	230	456	24
16	10	35	187	138	340	473	183	32	310	257	439	19
17	10	34	247	138	369	497	176	29	287	299	344	16
18	11	36	302	130	458	500	197	27	329	334	270	14
19	11	35	275	121	549	485	208	24	304	287	214	12
20	7.4	34	267	120	641	537	210	25	261	239	182	12
21	6.6	32	316	131	718	721	201	30	240	214	161	11
22	5.8	27	300	143	804	834	180	32	220	187	140	12
23	6.7	26	265	170	767	800	162	33	197	195	134	15
24	11	26	220	230	659	849	155	71	162	224	171	16
25	15	34	206	261	544	887	151	73	124	180	169	20
26	36	35	223	267	442	798	152	61	93	213	181	30
27	48	36	241	277	381	630	165	52	70	215	186	83
28	59	37	267	254	407	496	159	47	56	169	250	84
29	62	38	254	239	---	397	162	46	45	168	255	89
30	61	40	250	251	---	336	180	54	37	184	223	117
31	62	---	249	256	---	299	---	74	---	232	232	---
TOTAL	525.2	1534	4922	7858	14530	19406	6087	2845	7646	4234	7519	2314
MEAN	16.9	51.1	159	253	519	626	203	91.8	255	137	243	77.1
MAX	62	100	316	484	804	1130	282	293	533	334	492	211
MIN	5.2	26	37	120	316	299	151	24	37	11	132	11
CFSM	.07	.21	.64	1.02	2.09	2.52	.82	.37	1.03	.55	.98	.31
IN.	.08	.23	.74	1.18	2.18	2.91	.91	.43	1.15	.64	1.13	.35

CAL YR 1981 TOTAL 36636.4 MEAN 100 MAX 447 MIN 5.1 CFSM .40 IN 5.50
WTR YR 1982 TOTAL 79420.2 MEAN 218 MAX 1130 MIN 5.2 CFSM .88 IN 11.91

02042500 CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
NOV												
05...	1130	96	135	6.1	14.5	35	--	27	7.4	2.0	10	4.8
DEC												
16...	1415	192	100	6.6	4.0	40	--	22	6.3	1.6	7.5	3.8
FEB												
05...	1330	631	280	5.6	4.0	10	13.4	32	9.0	2.2	38	2.7
MAR												
11...	1340	1140	200	6.2	10.0	20	9.8	21	5.8	1.6	25	1.8
APR												
23...	1150	161	128	6.8	13.0	55	8.7	28	7.9	2.0	12	1.7
AUG												
31...	0830	234	90	5.8	23.5	50	7.5	23	7.0	1.4	8.7	.1

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
NOV											
05...	9.0	16	21	.1	9.9	94	77	.010	.03	.010	300
DEC											
16...	12	14	13	<.1	8.1	74	62	<.010	.08	.020	490
FEB											
05...	3.0	14	66	.1	5.0	166	139	<.010	.10	.010	120
MAR											
11...	6.0	13	41	<.1	2.4	126	94	<.010	.03	<.010	140
APR											
23...	26	4.0	17	.1	3.0	81	64	<.010	<.10	<.010	990
AUG											
31...	24	2.0	11	.2	9.1	--	54	<.010	<.10	<.010	280

< Actual value is known to be less than the value shown.

02043600 LAKE DRUMMOND IN GREAT DISMAL SWAMP, VA

LOCATION.--Lat 36°35'42", long 76°26'23", Chesapeake City, Hydrologic Unit 03010205, on right bank in outlet canal, 200 ft (61 m) upstream from dam and gates, 0.5 mi (0.8 km) downstream from Lake Drummond, 3.1 mi (5.0 km) north of North Carolina State line, and 20 mi (32 km) southwest of Norfolk.

PERIOD OF RECORD.--May 1926 to current year. Prior to October 1973, published as Lake Drummond in Dismal Swamp.

REVISED RECORDS.--WSP 1032: 1934-43.

GAGE.--Nonrecording gage. Datum of gage is 12.16 ft (3.706 m) National Geodetic Vertical Datum of 1929. Aug. 22, 1978, to Oct. 1, 1981, water-stage recorder at same site and datum.

REMARKS.--Mean daily gage heights are shown in table below.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.68 ft (2.036 m) Sept. 17, 1960; minimum, -0.67 ft (-0.204 m) Nov. 3, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.28 ft (1.609 m) July 10; minimum, 3.62 ft (1.103 m) Nov. 28, 29.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.60	3.87	3.65	5.10	4.66	4.45	4.73	4.58	4.93	5.00	5.12	4.88
2	4.67	3.86	3.77	5.11	4.59	4.41	4.74	4.59	5.00	4.96	4.98	4.90
3	4.49	3.82	3.78	5.16	4.60	4.48	4.57	4.56	4.97	4.96	5.04	4.90
4	4.46	3.82	3.75	5.10	4.61	4.52	4.76	4.54	5.02	5.00	5.08	4.90
5	4.46	3.80	3.86	5.04	4.62	4.46	4.58	4.51	5.03	5.04	5.10	4.90
6	4.43	3.88	3.90	4.98	4.67	4.37	4.70	4.57	4.93	5.00	5.10	4.90
7	4.39	3.84	3.81	4.89	4.63	4.41	4.60	4.61	4.97	5.00	5.10	4.91
8	4.35	3.81	3.91	4.83	4.60	4.36	4.52	4.59	4.90	5.00	5.20	4.88
9	4.29	3.77	3.82	4.78	4.50	4.37	4.60	4.60	4.98	5.00	5.25	4.84
10	4.27	3.76	3.80	4.78	4.53	4.43	4.56	4.60	4.99	5.28	5.20	4.90
11	4.24	3.75	3.84	4.55	4.51	4.43	4.53	4.60	4.98	5.20	5.07	4.86
12	4.16	3.74	3.85	4.55	4.50	4.45	4.54	4.60	4.97	5.17	5.18	4.80
13	4.18	3.72	3.82	4.69	4.60	4.45	4.55	4.61	4.98	5.20	5.13	4.80
14	4.11	3.70	3.78	4.75	4.52	4.44	4.56	4.60	5.02	4.86	5.14	4.84
15	4.11	3.69	3.95	4.75	4.47	4.40	4.54	4.66	5.01	4.87	5.12	4.79
16	4.08	3.68	3.98	4.73	4.44	4.43	4.55	4.66	4.98	5.02	4.97	4.76
17	4.04	3.73	4.01	4.68	4.50	4.44	4.56	4.65	5.00	4.99	4.84	4.76
18	4.00	3.75	4.07	4.64	4.52	4.52	4.59	4.63	5.00	4.98	4.70	4.66
19	4.07	3.74	4.12	4.60	4.59	4.53	4.60	4.65	5.00	5.00	4.64	4.76
20	4.01	3.70	4.17	4.56	4.61	4.56	4.57	4.56	5.02	5.10	4.68	4.76
21	3.98	3.75	4.20	4.57	4.67	4.58	4.56	4.62	5.04	5.12	4.78	4.86
22	3.90	3.69	4.19	4.53	4.61	4.60	4.55	4.62	5.00	4.97	4.81	4.78
23	3.87	3.70	4.33	4.53	4.61	4.56	4.56	4.73	5.00	4.98	4.90	4.81
24	3.87	3.69	4.34	4.54	4.57	4.57	4.58	4.73	4.96	5.06	4.98	4.76
25	3.95	3.69	4.47	4.44	4.60	4.56	4.61	4.80	4.92	4.98	5.04	4.80
26	3.95	3.69	4.58	4.47	4.48	4.58	4.66	4.84	4.95	5.00	5.06	4.80
27	4.00	3.66	4.65	4.45	4.41	4.55	4.70	4.91	4.96	5.00	4.98	4.93
28	3.99	3.63	4.67	4.50	4.49	4.50	4.80	4.91	4.96	5.04	4.97	4.76
29	3.98	3.63	4.75	4.50	---	4.49	4.66	4.96	4.98	5.08	4.91	4.69
30	3.93	3.65	4.78	4.54	---	4.60	4.64	4.90	4.99	5.04	4.94	4.75
31	3.91	---	4.94	4.57	---	4.64	---	4.93	---	5.06	4.88	---
MEAN	4.15	3.74	4.11	4.71	4.56	4.49	4.61	4.67	4.98	5.03	5.00	4.82
MAX	4.67	3.88	4.94	5.16	4.67	4.64	4.80	4.96	5.04	5.28	5.25	4.93
MIN	3.87	3.63	3.65	4.44	4.41	4.36	4.52	4.51	4.90	4.86	4.64	4.66

CAL YR 1981 MEAN 4.46 MAX 5.24 MIN 3.33
WTR YR 1982 MEAN 4.57 MAX 5.28 MIN 3.63

02044000 NOTTOWAY RIVER NEAR BURKEVILLE, VA

LOCATION (REVISED).--Lat 37°04'40", long 78°11'52", Lunenburg County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 723, 4.0 mi (6.4 km) upstream from Modest Creek, 5.6 mi (9.0 km) north of Victoria, and 7.5 mi (12.1 km) south of Burkeville.

DRAINAGE AREA.--38.7 mi² (100.2 km²).

PERIOD OF RECORD.--September 1946 to current year.

REVISED RECORDS.--WSP 1383: 1946-47, 1949. WSP 1433: 1948. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 354.58 ft (108.076 m) National Geodetic Vertical Datum of 1929. Prior to July 4, 1951, nonrecording gage at same site and datum. Prior to Oct. 29, 1981, on left bank at downstream side of bridge at same datum.

REMARKS.--Records good except those for period of no gage-height record, May 24 to July 15, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 38.5 ft³/s (1.090 m³/s), 13.51 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) Oct. 23, 1971, gage height, 22.33 ft (6.806 m), from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurement of peak flow; no flow Aug. 29 to Oct. 14, 1954, Sept. 3-5, 12-15, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, 27.4 ft (8.35 m) in August 1940, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 678 ft³/s (19.2 m³/s) Jan. 4, gage height, 9.99 ft (3.045 m), no peak above base of 1,200 ft³/s (34 m³/s); minimum, 0.66 ft³/s (0.019 m³/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	6.0	6.2	201	199	82	20	12	115	11	50	4.3
2	.69	5.5	7.4	72	69	128	18	11	60	11	16	4.2
3	.73	5.5	8.1	123	182	148	16	11	36	10	14	4.1
4	.69	4.9	9.0	334	148	70	22	11	52	16	9.8	3.8
5	.69	5.0	12	123	72	61	17	9.2	130	26	7.7	3.4
6	.73	5.3	11	56	51	46	18	8.3	80	15	6.8	3.3
7	.69	6.0	9.0	42	39	92	18	8.1	44	12	6.1	3.2
8	.69	5.7	8.1	32	32	127	16	7.6	28	11	5.8	3.1
9	.80	5.3	7.4	26	29	63	22	7.4	25	16	13	3.0
10	.80	5.2	7.0	20	32	45	25	6.9	27	68	15	3.1
11	.88	4.8	6.8	16	26	38	20	6.0	29	50	39	3.2
12	.95	4.7	6.5	13	23	34	18	5.6	25	100	47	3.2
13	1.2	4.7	6.5	13	28	29	17	5.5	100	250	20	3.1
14	1.2	4.6	7.6	12	44	27	16	5.3	68	80	11	3.0
15	1.2	4.7	112	12	41	26	14	4.8	46	150	8.8	2.9
16	1.3	4.7	138	13	36	42	14	4.5	27	25	7.7	2.8
17	1.4	4.9	64	14	143	53	14	4.4	80	15	8.2	2.8
18	1.6	5.2	38	14	162	34	19	4.2	75	11	59	2.7
19	2.0	4.9	26	15	86	28	18	3.9	54	8.4	19	2.5
20	2.1	5.0	19	17	70	63	14	5.3	35	7.2	10	2.7
21	1.9	5.3	16	46	52	59	14	11	30	42	7.5	4.1
22	2.6	5.3	20	74	40	41	13	12	27	15	6.1	8.8
23	3.0	5.2	49	53	32	30	12	177	23	35	7.7	7.5
24	4.0	5.8	31	72	29	26	11	86	20	56	9.2	4.6
25	6.5	11	139	53	26	24	10	160	18	20	17	4.0
26	10	9.4	116	37	22	23	21	75	16	13	9.6	8.2
27	14	7.8	58	29	25	20	42	33	14	8.5	6.1	33
28	30	7.0	38	25	46	17	28	60	13	6.7	6.5	10
29	33	6.3	29	30	---	16	18	150	12	6.2	6.3	6.1
30	9.6	6.0	23	40	---	15	14	110	11	5.8	4.9	4.7
31	7.0	---	23	139	---	15	---	92	---	47	4.5	---
TOTAL	142.60	171.7	1051.6	1766	1784	1522	539	1108.0	1320	1147.8	459.3	155.4
MEAN	4.60	5.72	33.9	57.0	63.7	49.1	18.0	35.7	44.0	37.0	14.8	5.18
MAX	33	11	139	334	199	148	42	177	130	250	59	33
MIN	.66	4.6	6.2	12	22	15	10	3.9	11	5.8	4.5	2.5
CFSM	.12	.15	.88	1.47	1.65	1.27	.47	.92	1.14	.96	.38	.13
IN.	.14	.17	1.01	1.70	1.71	1.46	.52	1.07	1.27	1.10	.44	.15

CAL YR 1981 TOTAL 5985.39 MEAN 16.4 MAX 1450 MIN .66 CFSM .42 IN 5.75
WTR YR 1982 TOTAL 11167.40 MEAN 30.6 MAX 334 MIN .66 CFSM .79 IN 10.73

CHOWAN RIVER BASIN

02044500 NOTTOWAY RIVER NEAR RAWLINGS, VA

LOCATION.--Lat 36°59'00", long 77°48'00", Brunswick County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 612 at Harpers Bridge, 0.1 mi (0.2 km) upstream from Beaver Pond Creek, and 2.6 mi (4.2 km) northwest of Rawlings.

DRAINAGE AREA.--309 mi^2 (800 km^2).

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 184.88 ft (56.351 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 310 ft^3/s (8.779 m^3/s), 13.62 in/yr (346 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,900 ft^3/s (847 m^3/s) Oct. 6, 1972, gage height, 23.25 ft (7.087 m), from rating curve extended above 16,000 ft^3/s (450 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.40 ft^3/s (0.11 m^3/s) Oct. 14, 15, 1954; minimum gage height, 1.83 ft (0.558 m) Oct. 15, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 20.8 ft (6.34 m), discharge, about 19,000 ft^3/s (540 m^3/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft^3/s (49.3 m^3/s) Mar. 8, gage height, 6.09 ft (1.856 m), no peak above base of 2,500 ft^3/s (71 m^3/s); minimum, 15 ft^3/s (0.42 m^3/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	91	74	597	799	698	214	179	787	121	272	118
2	18	82	80	1040	929	671	215	166	874	114	321	110
3	19	74	83	645	740	673	210	169	579	107	199	118
4	16	69	86	1160	1290	648	218	168	361	122	188	110
5	16	67	94	1540	1160	470	197	158	568	147	153	101
6	16	70	96	994	533	409	199	148	1000	176	126	91
7	16	71	93	521	395	516	193	141	540	183	115	86
8	19	67	89	404	316	1500	183	140	333	140	112	82
9	18	64	84	333	280	1150	209	141	262	118	167	81
10	18	62	80	281	281	569	227	133	233	109	360	81
11	18	62	100	202	262	439	221	124	268	124	335	81
12	20	63	79	175	237	376	205	119	253	383	1120	80
13	21	62	73	150	264	333	193	117	241	684	1240	77
14	23	63	74	140	323	305	184	115	653	846	422	76
15	24	63	126	138	338	282	181	113	735	627	261	75
16	27	63	548	140	323	301	173	110	353	383	212	75
17	31	69	668	150	435	361	175	108	265	301	515	77
18	31	84	349	160	1040	351	197	105	573	213	748	74
19	37	80	225	162	1020	302	211	106	517	165	1010	72
20	38	77	169	170	600	353	203	114	337	138	393	70
21	35	76	130	195	473	548	198	121	270	160	245	72
22	40	70	149	289	394	468	192	135	245	243	195	95
23	43	67	187	364	328	354	181	338	215	176	167	134
24	55	68	213	398	288	300	170	1060	190	188	159	118
25	71	83	253	423	263	274	164	768	170	288	154	96
26	99	87	647	357	237	259	187	1340	157	200	144	102
27	117	88	599	288	248	239	277	565	149	148	135	235
28	259	86	380	240	499	222	307	312	140	127	127	260
29	302	80	293	218	---	213	248	638	133	117	137	161
30	165	76	240	233	---	207	204	1260	130	113	137	114
31	112	---	214	307	---	205	---	1060	---	125	125	---
TOTAL	1742	2184	6575	12414	14295	13996	6136	10271	11531	7086	9994	3122
MEAN	56.2	72.8	212	400	511	451	205	331	384	229	322	104
MAX	302	91	668	1540	1290	1500	307	1340	1000	846	1240	260
MIN	16	62	73	138	237	205	164	105	130	107	112	70
CFSM	.18	.24	.69	1.29	1.65	1.46	.66	1.07	1.24	.74	1.04	.34
IN.	.21	.26	.79	1.49	1.72	1.68	.74	1.24	1.39	.85	1.20	.38

CAL YR 1981 TOTAL 52742 MEAN 144 MAX 4680 MIN 16 CFSM .47 IN 6.35
WTR YR 1982 TOTAL 99346 MEAN 272 MAX 1540 MIN 16 CFSM .88 IN 11.96

02045500 NOTTOWAY RIVER NEAR STONY CREEK, VA

LOCATION.--Lat 36°54'00", long 77°24'00", Sussex County, Hydrologic Unit 03010201, on left bank 15 ft (5 m) downstream from upstream bridge on U.S. Highway 301, 1.8 mi (2.9 km) upstream from Island Swamp, 3.3 mi (5.3 km) south of town of Stony Creek, and 4.4 mi (7.1 km) upstream from Stony Creek.

DRAINAGE AREA.--579 mi^2 (1,500 km^2).

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1935(M). WSP 972: 1931(M), 1932, 1934-35, 1939. WSP 2104: Drainage area. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 58.42 ft (17.806 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 11, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by Baskerville Mill, 33 mi (53 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 560 ft^3/s (15.86 m^3/s), 13.13 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft^3/s (714 m^3/s) Aug. 17, 1940, gage height, 23.66 ft (7.212 m), from rating curve extended above 13,000 ft^3/s (370 m^3/s); minimum, 3.4 ft^3/s (0.096 m^3/s) Aug. 15, 16, 1977; minimum gage height, 0.62 ft (0.189 m) Sept. 2, 5, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,980 ft^3/s (113 m^3/s) at 1700 hours July 15, gage height, 13.90 ft (4.237 m), no other peak above base of 3,500 ft^3/s (99 m^3/s); minimum, 6.3 ft^3/s (0.18 m^3/s) Oct. 19-20, gage height, 2.01 ft (0.613 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	131	82	909	1050	1900	396	328	1290	139	257	154
2	23	101	82	1520	1540	1480	394	280	1070	125	423	138
3	23	85	84	1380	1840	1180	391	256	1060	116	398	133
4	21	74	92	1660	2330	1110	389	251	695	124	259	131
5	19	66	99	2200	2330	955	371	237	777	137	229	126
6	20	66	106	1990	1430	804	348	219	1360	158	191	111
7	19	62	111	1030	856	1030	353	201	1230	189	153	100
8	17	65	108	648	659	2680	331	190	675	201	135	91
9	16	63	100	508	554	2740	353	188	462	160	160	86
10	15	59	94	416	558	1540	436	182	360	915	425	83
11	17	55	85	293	548	950	424	168	329	1380	711	81
12	35	55	92	292	480	779	394	154	367	1470	2380	80
13	25	54	97	291	572	677	362	146	358	1190	2380	79
14	17	54	79	308	920	609	335	139	553	1810	1440	76
15	12	55	113	277	810	557	315	134	1050	3530	798	73
16	11	54	501	397	750	597	286	130	784	2000	1230	71
17	9.9	58	1030	379	1380	703	269	124	459	973	926	69
18	8.2	62	803	353	2600	708	385	121	566	674	880	70
19	7.0	82	466	337	2440	617	438	116	997	424	1430	73
20	17	89	306	340	1560	768	374	112	729	322	1130	68
21	21	82	211	395	1050	1090	345	137	506	263	528	66
22	21	79	218	603	842	1010	329	141	514	242	353	70
23	27	73	253	717	709	762	306	214	409	377	271	81
24	26	68	311	1170	600	609	281	1030	325	769	227	138
25	37	68	423	973	529	544	255	1320	263	574	214	143
26	51	79	854	775	464	515	268	1180	222	488	198	136
27	76	96	1130	551	476	482	434	1430	196	329	183	219
28	101	98	805	488	1720	446	596	799	176	249	169	411
29	338	96	546	459	---	410	524	646	161	212	159	379
30	357	88	413	472	---	396	401	1280	147	199	163	244
31	199	---	328	561	---	387	---	1700	---	196	166	---
TOTAL	1609.1	2217	10022	22692	31597	29035	11083	13553	18090	19935	18566	3780
MEAN	51.9	73.9	323	732	1128	937	369	437	603	643	599	126
MAX	357	131	1130	2200	2600	2740	596	1700	1360	3530	2380	411
MIN	7.0	54	79	277	464	387	255	112	147	116	135	66
CFSM	.09	.13	.56	1.26	1.95	1.62	.64	.76	1.04	1.11	1.04	.22
IN.	.10	.14	.64	1.46	2.03	1.87	.71	.87	1.16	1.28	1.19	.24

CAL YR 1981 TOTAL 76942.1 MEAN 211 MAX 4560 MIN 7.0 CFSM .36 IN 4.94
WTR YR 1982 TOTAL 182179.1 MEAN 499 MAX 3530 MIN 7.0 CFSM .86 IN 11.70

02046000 STONY CREEK NEAR DINWIDDIE, VA

LOCATION.--Lat 37°04'01", long 77°36'10", Dinwiddie County, Hydrologic Unit 03010201, on right bank at upstream side of upstream bridge on U.S. Highway 1, 1.2 mi (1.9 km) southwest of Dinwiddie, 1.7 mi (2.7 km) downstream from Chamberlains Bed Creek, and 5.7 mi (9.2 km) downstream from confluence of White Oak and Butterwood Creeks.

DRAINAGE AREA.--112 mi^2 (290 km^2).

PERIOD OF RECORD.--September 1946 to current year. Published as "at Dinwiddie" September 1946 to September 1947 and October 1949 to September 1950.

REVISED RECORDS.--WSP 1303: 1947(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 129.94 ft (39.606 m) National Geodetic Vertical Datum of 1929. Prior to June 12, 1957, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 112 ft^3/s (3.172 m^3/s), 13.58 in/yr (345 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft^3/s (323 m^3/s) Oct. 6, 1972, gage height, 20.84 ft (6.352 m), from rating curve extended above 5,800 ft^3/s (160 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for part of Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) at 0330 hours Aug. 17, gage height, 8.51 ft (2.594 m), no other peak above base of 1,200 ft^3/s (34 m^3/s); minimum, 0.28 ft^3/s (0.008 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	15	12	293	342	466	71	49	97	30	31	22
2	1.7	13	14	293	268	309	69	43	172	25	37	21
3	1.4	12	17	220	430	205	66	40	209	21	33	23
4	1.2	10	22	413	564	154	64	36	124	20	26	22
5	.95	8.1	23	392	342	133	56	34	176	21	20	19
6	.72	8.4	23	223	193	125	55	31	254	25	17	18
7	2.1	7.6	22	131	138	270	54	29	162	27	14	15
8	2.5	6.3	19	93	107	761	50	28	88	26	12	13
9	2.5	5.2	16	73	95	527	63	28	57	22	13	12
10	2.8	5.1	14	58	109	237	78	26	44	23	31	11
11	3.2	5.9	13	47	102	167	71	24	40	29	66	10
12	3.4	5.8	12	34	85	140	60	22	39	24	785	9.8
13	3.8	9.5	12	32	102	121	54	21	45	22	498	8.9
14	4.2	7.5	14	31	155	107	50	20	114	32	173	8.5
15	4.3	3.9	55	31	172	101	46	19	136	116	434	8.5
16	6.5	4.0	185	32	157	132	43	18	85	131	521	8.5
17	4.1	8.8	145	35	246	188	43	17	57	66	965	8.5
18	3.0	9.5	84	36	513	154	71	16	120	39	854	8.5
19	4.6	13	54	44	382	119	71	15	126	29	458	11
20	5.4	15	40	50	246	206	63	16	112	24	174	14
21	5.7	15	32	70	182	295	59	21	67	20	99	15
22	6.9	11	33	118	140	212	54	32	48	18	66	18
23	8.1	10	42	133	111	144	48	37	40	18	51	21
24	8.2	11	46	251	95	114	44	75	33	31	42	23
25	9.8	14	85	195	82	100	41	231	28	79	38	23
26	12	16	203	140	72	90	55	130	25	83	33	27
27	11	16	144	91	87	81	137	82	147	41	29	47
28	19	15	96	79	400	72	112	56	118	27	30	42
29	22	13	70	75	---	66	78	48	57	21	28	30
30	21	13	53	86	---	64	57	65	37	18	25	22
31	18	---	46	148	---	63	---	86	---	18	24	---
TOTAL	200.53	307.6	1646	3947	5917	5923	1883	1395	2857	1126	5627	540.2
MEAN	6.47	10.3	53.1	127	211	191	62.8	45.0	95.2	36.3	182	18.0
MAX	22	16	203	413	564	761	137	231	254	131	965	47
MIN	.46	3.9	12	31	72	63	41	15	25	18	12	8.5
CFSM	.06	.09	.47	1.13	1.88	1.71	.56	.40	.85	.32	1.63	.16
IN.	.07	.10	.55	1.31	1.97	1.97	.63	.46	.95	.37	1.87	.18

CAL YR 1981 TOTAL 13083.87 MEAN 35.8 MAX 2230 MIN .46 CFSM .32 IN 4.35
WTR YR 1982 TOTAL 31369.33 MEAN 85.9 MAX 965 MIN .46 CFSM .77 IN 10.42

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°46'13", long 77°09'59", Southampton County, Hydrologic Unit 03010201, on right bank 1,000 ft (305 m) upstream from bridge on State Highway 653, 1 mi (2 km) downstream from Three Creek, 2.5 mi (4.0 km) southwest of Sebrell, and 5.5 mi (8.8 km) upstream from Assamoosick Swamp.

DRAINAGE AREA.--1,421 mi² (3,680 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1942, 1944, 1948-49. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.94 ft (1.811 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--41 years, 1,353 ft³/s (38.32 m³/s), 12.93 in/yr (328 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft³/s (736 m³/s) July 19, 1975, gage height, 24.43 ft (7.446 m); minimum, 4.0 ft³/s (0.11 m³/s) Oct. 25, 1981; minimum gage height, 2.82 ft (0.860 m) Oct. 24-25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 29.7 ft (9.05 m), from floodmarks, discharge, 48,000 ft³/s (1,360 m³/s), from rating curve extended above 25,000 ft³/s (710 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,950 ft³/s (168 m³/s) Feb. 21, gage height, 15.63 ft (4.764 m); minimum, 4.0 ft³/s (0.11 m³/s) Oct. 25; minimum gage height, 2.82 ft (0.860 m) Oct. 24-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	302	93	1080	2010	3040	1100	1380	2990	325	742	333
2	46	208	87	1530	2240	3820	1080	1200	2970	277	986	318
3	43	154	82	2290	2710	4460	1080	1000	2460	243	979	295
4	40	122	83	2820	3110	4850	1040	832	2060	220	875	276
5	37	102	86	3150	3500	4620	908	721	1770	206	686	257
6	34	93	94	3440	3930	3940	936	645	1680	199	528	246
7	32	81	105	3730	4440	3410	883	573	2020	212	432	226
8	29	73	114	3860	4620	3470	850	502	2160	233	354	204
9	27	67	113	3390	3900	3920	864	444	1690	264	315	189
10	25	55	106	2340	2850	4460	911	404	1120	357	381	175
11	23	52	95	1560	2190	5110	1020	374	845	834	795	167
12	22	56	86	1040	1950	5480	1070	344	691	1840	1620	160
13	20	49	75	897	1910	4900	1020	309	632	2560	2560	155
14	17	46	82	897	2220	3680	939	282	688	2830	3360	150
15	31	46	115	980	2670	2740	866	257	899	2740	4480	145
16	29	46	206	1060	2920	2320	813	238	1240	2950	4930	139
17	20	48	563	1160	3130	2320	757	219	1280	3530	4330	132
18	15	49	1210	1220	3650	2470	754	202	930	3990	3760	127
19	12	49	1390	1140	4480	2540	919	188	933	3700	3590	125
20	10	52	1060	1090	5200	2460	1160	178	1380	2330	3700	128
21	6.1	68	759	1180	5780	2510	1110	167	1390	1220	4020	125
22	6.7	92	586	1380	5850	2850	1040	167	1100	753	4080	118
23	5.8	79	541	1700	5120	3050	945	195	914	557	3140	114
24	4.7	77	560	2360	3890	2920	848	392	767	841	1590	115
25	17	72	665	2910	2870	2480	777	1250	622	1770	852	137
26	31	65	880	3280	2200	2070	739	1990	507	1740	664	207
27	34	63	1400	3330	1860	1780	902	2170	420	1230	543	303
28	52	74	1830	3300	2250	1570	1250	2440	361	872	464	479
29	84	92	1810	2950	---	1400	1570	2400	363	717	407	701
30	164	94	1450	2040	---	1250	1560	1970	392	778	371	773
31	367	---	1150	1840	---	1140	---	2370	---	672	345	---
TOTAL	1332.3	2536	17476	64944	93450	97070	29711	25803	37274	40990	55879	7019
MEAN	43.0	84.5	564	2095	3338	3131	990	832	1242	1322	1803	234
MAX	357	302	1630	3860	5850	5480	1570	2440	2990	3990	4930	773
MIN	4.7	46	75	897	1860	1140	739	167	361	199	315	114
CFSM	.03	.06	.40	1.47	2.35	2.20	.70	.59	.87	.93	1.27	.17
IN.	.03	.07	.46	1.70	2.45	2.54	.78	.68	.98	1.07	1.46	.18

CAL YR 1981 TOTAL 141143.3 MEAN 387 MAX 6520 MIN 4.7 CFSM .27 IN 3.69
WTR YR 1982 TOTAL 473484.3 MEAN 1297 MAX 5850 MIN 4.7 CFSM .91 IN 12.40

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1978 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1946 to September 1947.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
NOV 04...	1200	121	86	7.3	14.5	2.3	9.4	33	50	25	6.2	2.4
DEC 16...	0800	183	95	6.8	4.0	3.0	13.0	200	950	25	6.6	2.1
MAR 16...	1230	2300	60	6.5	11.0	6.1	8.9	59	130	16	4.2	1.4
MAY 17...	1245	218	91	7.5	22.0	3.9	7.0	23	720	27	6.7	2.4
JUL 07...	0930	212	87	7.1	24.5	11	64.0	30	47	30	7.4	2.8
AUG 25...	0930	886	68	6.5	24.0	8.6	5.9	--	--	20	5.3	1.7

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
NOV 04...	7.0	2.4	26	5.2	6.6	.1	13	67	59	.02	<.010	.56
DEC 16...	6.7	2.5	20	11	7.4	<.1	13	72	62	.04	<.010	.29
MAR 16...	3.7	1.5	10	10	4.6	<.1	7.5	58	39	.12	.040	.44
MAY 17...	5.7	1.6	28	5.0	5.5	.1	9.6	62	54	.12	.040	.62
JUL 07...	6.8	1.3	29	6.0	5.1	.1	17	72	65	.23	.040	.30
AUG 25...	4.2	1.4	18	6.0	4.1	<.1	14	66	48	.15	<.010	1.20

< Actual value is known to be less than the value shown.

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
NOV 04...	.030	.020	<.010	1	<1	100	31	2	1	20	10
DEC 16...	.030	.010	<.010	1	<1	<100	25	1	<1	20	10
MAR 16...	.020	.020	.010	--	--	--	--	--	--	--	--
MAY 17...	.060	.030	.020	1	1	<100	37	2	2	20	10
JUL 07...	.050	.050	.030	1	1	<100	43	<1	<1	10	10
AUG 25...	.080	.040	.020	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
NOV 04...	1	<1	5	1	360	210	2	1	70	37	.2
DEC 16...	<1	<1	7	3	750	340	1	<1	80	57	.1
MAR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 17...	2	1	4	4	1200	410	4	1	120	95	7.0
JUL 07...	4	1	4	3	1400	900	4	2	120	83	.1
AUG 25...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 04...	.2	1	1	<1	<1	<1	<1	30	<4	2	100
DEC 16...	.1	2	1	<1	<1	<1	<1	50	7	17	100
MAR 16...	--	--	--	--	--	--	--	--	--	10	80
MAY 17...	.1	5	4	<1	<1	<1	<1	40	4	11	89
JUL 07...	<.1	4	2	<1	<1	<1	<1	20	<4	12	94
AUG 25...	--	--	--	--	--	--	--	--	--	16	96

< Actual value is known to be less than the value shown.

02047100 ASSAMOOSICK SWAMP NEAR SEBRELL, VA

LOCATION.--Lat 36°46'22", long 77°05'57", Southampton County, Hydrologic Unit 03010201, near center of span on upstream side of bridge on State Highway 35, 0.7 mi (1.1 km) upstream from Indian Branch, 1.7 mi (2.7 km) southeast of Sebrell, and 2.8 mi (4.5 km) upstream from mouth.

DRAINAGE AREA.--86.4 mi^2 (224 km^2).

PERIOD OF RECORD.--March to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 885 ft^3/s (25.1 m^3/s) Aug. 14, gage height, 6.05 ft (1.844 m); no flow July 7-9, Sept. 8-25, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	71	112	56	.20	84	.80
2						---	66	90	61	.10	79	.47
3						---	63	72	46	.05	124	.35
4						---	58	59	34	.17	157	.18
5						---	52	48	54	.08	94	.12
6						---	50	39	82	.01	50	.05
7						---	46	30	125	.00	29	.02
8						---	45	24	107	.00	17	.00
9						---	55	19	71	.00	17	.00
10						---	63	12	46	30	23	.00
11						---	69	9.3	30	48	44	.00
12						---	68	6.8	17	31	130	.00
13						---	66	5.2	12	48	293	.00
14						---	63	3.6	10	88	822	.00
15						---	56	2.2	21	104	544	.00
16						---	48	1.3	52	201	329	.00
17						---	46	.86	59	163	245	.00
18						---	52	.47	47	130	203	.00
19						---	53	.38	47	92	221	.00
20						---	53	.26	42	53	215	.00
21						---	52	.18	34	34	184	.00
22						---	52	.20	28	26	155	.00
23						188	50	.35	23	14	119	.00
24						173	49	3.9	14	18	113	.00
25						154	45	45	7.9	21	44	.00
26						133	55	175	4.4	22	26	.01
27						116	86	159	2.1	17	14	.12
28						98	112	95	1.1	14	9.0	.01
29						87	130	101	.80	9.6	3.9	.00
30						80	128	75	.44	6.2	2.1	1.6
31						74	---	76	---	25	1.1	---
TOTAL	---	---	---	---	---	---	1902	1266.00	1134.74	1195.41	4391.1	3.73
MEAN	---	---	---	---	---	---	63.4	40.8	37.8	38.6	142	.12
MAX	---	---	---	---	---	---	130	175	125	201	822	1.6
MIN	---	---	---	---	---	---	45	.18	.44	.00	1.1	.00
CFSM	---	---	---	---	---	---	.73	.47	.44	.45	1.64	.001
IN.	---	---	---	---	---	---	.82	.55	.49	.51	1.89	.00

02047500 BLACKWATER RIVER NEAR DENDRON, VA

LOCATION.--Lat 37°01'30", long 76°52'30", Surry County, Hydrologic Unit 03010202, on left bank 10 ft (3 m) upstream from Walls Bridge on State Highway 617, 1.2 mi (1.9 km) downstream from Cypress Swamp, and 3.5 mi (5.6 km) southeast of Dendron.

DRAINAGE AREA.--294 mi^2 (761 km^2).

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.99 ft (9.446 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 13, 1980, at site 25 ft (8 m) upstream at same datum.

REMARKS.--Records good except those for period of doubtful gage-height record, Nov. 1 to Dec. 15, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--41 years, 311 ft^3/s (8.808 m^3/s), 14.37 in/yr (365 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,070 ft^3/s (144 m^3/s) June 5, 1963, gage height, 9.1 ft (2.77 m), from high-water mark in well; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.1 ft (3.99 m), from Corps of Engineers floodmarks, discharge, 10,000 ft^3/s (283 m^3/s), from rating curve extended above 4,800 ft^3/s (140 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft^3/s (75.0 m^3/s) Aug. 13, gage height, 6.71 ft (2.045 m); no flow Oct. 12-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	28	24	282	440	790	278	454	172	14	115	55
2	.80	23	26	299	430	936	247	431	172	5.8	117	49
3	1.0	21	28	354	470	894	235	376	157	1.6	152	44
4	.50	20	39	451	507	834	220	306	155	4.1	120	33
5	.30	20	48	514	573	818	208	247	193	4.1	81	24
6	.30	20	48	598	657	796	208	208	199	3.5	48	17
7	1.7	21	44	657	678	790	196	172	226	4.4	31	13
8	1.3	23	40	617	657	870	187	145	226	2.8	22	11
9	.79	24	37	545	623	996	202	125	196	1.3	54	8.9
10	.19	24	35	475	573	1040	208	102	152	12	145	7.7
11	.03	23	31	372	496	924	211	85	130	56	384	7.4
12	.00	22	29	312	417	823	214	67	112	112	1780	7.0
13	.00	21	27	277	408	785	205	54	117	178	2600	5.5
14	.00	19	27	250	417	715	196	44	181	166	2060	4.1
15	.00	18	90	235	445	635	199	34	157	281	1320	3.2
16	.00	18	173	230	496	595	199	26	169	299	852	2.5
17	.00	17	199	220	556	585	187	20	157	193	650	1.6
18	.00	19	239	215	692	585	184	14	132	115	720	1.2
19	.00	18	240	210	932	595	175	9.8	127	76	829	1.6
20	.00	17	203	223	1070	600	187	5.8	147	45	768	2.2
21	.00	17	174	241	1040	590	220	3.5	137	32	700	3.8
22	.00	17	173	270	966	610	238	8.1	112	44	670	7.7
23	.00	16	181	320	840	620	250	64	112	61	595	9.4
24	.00	16	185	496	785	590	257	316	127	76	557	8.1
25	.91	17	229	611	685	544	250	476	130	100	368	6.6
26	14	19	268	769	595	503	253	340	112	88	260	15
27	23	22	288	783	544	467	348	271	86	66	172	59
28	29	24	300	734	650	418	392	214	58	74	108	74
29	32	25	293	595	---	372	431	175	40	115	67	81
30	33	24	270	475	---	328	454	184	24	104	58	64
31	33	---	247	455	---	306	---	175	---	106	64	---
TOTAL	172.32	613	4235	13085	17642	20954	7239	5152.2	4215	2440.6	16467	627.5
MEAN	5.56	20.4	137	422	630	676	241	166	141	78.7	531	20.9
MAX	33	28	300	783	1070	1040	454	476	226	299	2600	81
MIN	.00	16	24	210	408	306	175	3.5	24	1.3	22	1.2
CFSM	.02	.07	.47	1.44	2.14	2.30	.82	.57	.48	.27	1.81	.07
IN.	.02	.08	.54	1.66	2.23	2.65	.92	.65	.53	.31	2.08	.08

CAL YR 1981 TOTAL 25934.48 MEAN 71.1 MAX 1370 MIN .00 CFSM .24 IN 3.28
WTR YR 1982 TOTAL 92842.62 MEAN 254 MAX 2600 MIN .00 CFSM .86 IN 11.75

02048000 BLACKWATER RIVER AT ZUNI, VA

LOCATION.--Lat 36°52'05", long 76°50'07", Isle of Wight County, Hydrologic Unit 03010202, on left bank at downstream side of bridge on U.S. Highway 460 at Zuni, 1.6 mi (2.6 km) downstream from Pope Swamp, and 4.2 mi (6.8 km) upstream from Antioch Swamp.

DRAINAGE AREA.--456 mi² (1,181 km²).

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8.56 ft (2.609 m) National Geodetic Vertical Datum of 1929. Prior to July 18, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 492 ft³/s (13.93 m³/s), 14.65 in/yr (372 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s (198 m³/s) Mar. 21, 1975; maximum gage height, 17.51 ft (5.337 m) June 5, 1963; no flow Sept. 10-18, 1944, Sept. 28 to Oct. 31, 1954, part of each day Sept. 1, 2, 1976, and Sept. 23, 24, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 23.2 ft (7.07 m), discharge, 16,000 ft³/s (453 m³/s), from rating curve extended above 5,500 ft³/s (160 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,000 ft³/s (85.0 m³/s) Aug. 15, gage height, 11.05 ft (3.368 m); minimum, 0.74 ft³/s (0.021 m³/s) Oct. 21, gage height, 1.82 ft (0.555 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	47	40	553	716	1440	493	586	307	57	302	68
2	3.0	42	43	601	701	1640	447	576	291	41	265	55
3	2.9	38	55	642	768	1690	411	561	268	29	189	49
4	2.9	35	66	790	834	1650	376	531	243	22	148	44
5	2.7	33	77	1070	862	1520	345	473	289	25	145	36
6	2.6	37	80	1220	912	1440	319	400	388	26	136	29
7	2.4	39	76	1220	947	1560	297	331	448	22	103	23
8	2.3	40	70	1150	956	1840	286	271	454	19	77	18
9	1.9	41	65	1080	938	1980	296	221	393	16	149	12
10	1.6	39	60	983	912	2000	313	182	336	17	227	8.8
11	1.6	40	55	800	869	1970	320	147	285	43	257	6.0
12	1.5	38	51	633	803	1860	320	116	236	164	621	4.0
13	1.2	35	47	523	802	1660	311	95	191	254	1360	3.1
14	.95	33	45	480	886	1480	298	79	177	735	2560	2.2
15	.89	31	84	440	910	1350	283	66	221	1100	2960	2.1
16	.86	30	233	400	907	1320	266	55	282	896	2620	2.1
17	.83	29	326	380	1020	1300	253	45	275	680	2130	2.0
18	.83	31	415	370	1330	1260	255	36	233	542	1610	2.7
19	.83	30	470	360	1550	1210	262	30	212	381	1160	4.2
20	.79	29	459	375	1680	1180	261	23	193	257	1010	4.3
21	.77	28	407	401	1730	1180	250	18	173	167	1070	4.9
22	.78	28	369	479	1700	1180	239	13	162	102	1060	6.3
23	.82	27	358	555	1560	1160	243	12	156	68	980	6.2
24	1.3	27	348	883	1400	1120	260	169	138	67	902	5.8
25	6.6	29	371	1200	1230	1060	276	528	117	78	825	6.7
26	45	33	471	1380	1060	975	299	946	109	78	685	9.0
27	66	36	574	1290	945	873	360	1360	110	84	527	52
28	62	40	660	1180	1180	783	434	1190	106	84	383	89
29	62	42	660	1050	---	700	525	810	93	75	268	81
30	62	41	589	880	---	618	578	527	75	73	173	83
31	55	---	519	774	---	550	---	381	---	119	103	---
TOTAL	397.85	1048	8143	24142	30108	41549	9876	10778	6961	6321	25005	719.4
MEAN	12.8	34.9	263	779	1075	1340	329	348	232	204	807	24.0
MAX	66	47	660	1380	1730	2000	578	1360	454	1100	2960	89
MIN	.77	27	40	360	701	550	239	12	75	16	77	2.0
CFSM	.03	.08	.58	1.71	2.36	2.94	.72	.76	.51	.45	1.77	.05
IN.	.03	.09	.66	1.97	2.46	3.39	.81	.88	.57	.52	2.04	.06

CAL YR 1981 TOTAL 53703.11 MEAN 147 MAX 3110 MIN .40 CFSM .32 IN 4.38
WTR YR 1982 TOTAL 165048.25 MEAN 452 MAX 2960 MIN .77 CFSM .99 IN 13.46

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°45'45", long 76°53'55", Southampton County, Hydrologic Unit 03010202, on right bank 0.4 mi (0.6 km) south of Burdette, 0.5 mi (0.8 km) upstream from Black Creek, 3.3 mi (5.3 km) downstream from Corrowaugh Swamp, and 6.0 mi (9.7 km) north of Franklin.

DRAINAGE AREA.--617 mi² (1,598 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.56 ft (0.475 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Low flow reversed by tide some years. Diversion above station by city of Norfolk for municipal supply most years.

AVERAGE DISCHARGE.--38 years, 641 ft³/s (18.15 m³/s), 14.11 in/yr (358 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s (267 m³/s) Sept. 14, 1960, gage height, 17.14 ft (5.224 m), from floodmarks; minimum daily, 0.07 ft³/s (0.002 m³/s) Oct. 16, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 22 ft (6.7 m), discharge, 21,000 ft³/s (595 m³/s), from rating curve extended above 9,400 ft³/s (270 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,360 ft³/s (66.8 m³/s) Feb. 20, 21, gage height, 9.87 ft (3.008 m); minimum daily, 0.07 ft³/s (0.002 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	64	25	1110	1320	1920	674	683	528	59	196	97
2	10	52	33	1220	1250	2080	626	666	418	41	407	67
3	8.6	57	41	1250	1280	2110	580	633	354	27	310	47
4	12	47	53	1370	1400	2030	540	602	311	25	250	33
5	11	42	57	1650	1460	1910	497	568	360	18	200	21
6	8.8	38	82	1870	1520	1780	463	520	456	14	150	14
7	4.5	36	87	1880	1560	1840	433	457	471	11	75	8.9
8	1.5	41	86	1810	1540	2090	403	383	475	8.8	40	6.3
9	.74	39	78	1690	1500	2260	409	313	459	6.8	9.2	5.6
10	1.3	47	74	1620	1480	2300	445	257	404	141	41	4.4
11	2.5	34	70	1460	1430	2220	461	204	336	431	210	4.2
12	3.0	32	61	1250	1360	2080	457	160	277	372	1000	2.8
13	2.8	20	50	1070	1380	1900	441	125	227	283	1700	1.8
14	.47	25	44	1020	1550	1710	424	101	187	379	2050	3.0
15	.11	24	72	997	1600	1610	401	86	158	654	1750	3.6
16	.07	23	316	964	1580	1590	379	75	189	912	1160	3.9
17	.08	25	531	950	1700	1600	357	64	248	799	790	3.2
18	2.6	23	614	910	2040	1580	341	53	251	619	840	2.4
19	6.4	27	697	845	2270	1530	338	44	235	496	910	4.6
20	2.3	41	740	832	2350	1490	348	37	221	373	920	8.2
21	3.8	23	705	892	2330	1480	353	30	194	279	870	15
22	2.4	20	663	1060	2260	1460	338	26	164	180	830	18
23	2.4	20	636	1210	2140	1420	320	25	143	109	770	16
24	3.3	19	614	1460	1980	1380	309	77	128	93	710	13
25	6.3	17	633	1820	1790	1310	316	283	111	84	692	18
26	46	18	783	2000	1660	1230	336	623	97	75	630	35
27	41	20	946	1990	1550	1120	407	920	89	69	560	57
28	112	23	1050	1860	1670	1010	493	1150	85	66	477	65
29	103	22	1120	1700	---	896	582	1190	87	63	369	70
30	83	23	1120	1590	---	799	658	934	76	55	260	76
31	74	---	1040	1450	---	725	---	715	---	52	167	---
TOTAL	623.17	943	13131	42800	46950	50460	13129	12004	7739	6794.6	19343.2	724.9
MEAN	20.1	31.4	424	1381	1677	1628	438	387	258	219	624	24.2
MAX	112	64	1120	2000	2350	2300	674	1190	528	912	2050	97
MIN	.07	17	25	832	1250	725	309	25	76	6.8	9.2	1.8
(*)	14.0	23.9	24.7	3.6	0	0	0	6.1	29.6	18.9	31.9	19.0
MEAN‡	34.1	55.3	449	1385	1677	1628	438	393	288	238	656	43.2
CFSM‡	.06	.09	.73	2.24	2.72	2.64	.71	.64	.47	.39	1.06	.07
IN‡	.07	.10	.84	2.58	2.83	3.04	.79	.74	.52	.45	1.22	.08

CAL YR 1981 TOTAL 63191.97 MEAN 173 MAX 2870 MIN .07 MEAN‡ 198 CFSM‡ .32 IN‡ 4.37
WTR YR 1982 TOTAL 214641.87 MEAN 588 MAX 2350 MIN .07 MEAN‡ 602 CFSM‡ .98 IN‡ 13.26

* Diversion, in cubic feet per second, by City of Norfolk.
‡ Adjusted for diversion.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at bridge 2.0 mi (3.2 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1947, 1952, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEO S (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV 04...	0915	48	126	6.6	14.5	<1.0	4.4	180	85	45	14	2.4
DEC 16...	1130	298	120	6.6	4.5	10	10.6	K2000	MO	39	12	2.1
MAR 16...	0915	1590	79	6.4	11.0	5.8	8.2	330	92	25	7.8	1.4
MAY 18...	1030	62	110	7.2	24.0	4.3	5.0	15	49	40	13	1.7
JUL 07...	1215	10	110	7.1	28.0	3.9	3.4	14	92	45	15	1.8
AUG 24...	1030	751	76	6.4	22.0	4.8	5.4	--	--	28	9.4	1.2

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.
MO All plates with colonies too numerous to count.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 04...	5.4	2.6	19	20	12	.1	11	116	80	.05	.020	.93
DEC 16...	5.5	2.2	13	17	14	<.1	10	98	71	.23	.040	.87
MAR 16...	3.2	1.7	10	13	7.4	<.1	2.3	--	43	.27	.050	.61
MAY 18...	4.4	1.7	29	6.0	9.1	.1	3.9	86	59	.15	.090	.85
JUL 07...	4.2	1.2	32	6.0	9.0	<.1	11	108	69	.10	.030	.80
AUG 24...	2.9	1.3	18	6.0	5.4	<.1	8.2	--	45	.12	<.010	1.30

< Actual value is known to be less than the value shown.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
NOV 04...	.030	.020	<.010	1	<1	100	68	2	<1	10	<10
DEC 16...	.050	.020	<.010	1	<1	100	46	1	<1	20	10
MAR 16...	.020	.010	.020	--	--	--	--	--	--	--	--
MAY 18...	.090	.030	.010	1	1	100	76	2	2	20	10
JUL 07...	.080	.020	<.010	2	1	<100	68	1	<1	20	10
AUG 24...	.080	.030	.010	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
NOV 04...	2	1	5	1	1500	760	3	1	200	180	.4
DEC 16...	<1	<1	6	5	1400	440	3	<1	70	63	<.1
MAR 16...	--	--	--	--	--	--	--	--	--	--	--
MAY 18...	4	2	4	3	2300	1700	3	3	320	300	.2
JUL 07...	6	1	4	3	2400	1300	5	2	450	380	.2
AUG 24...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 04...	.2	3	2	<1	<1	<1	<1	40	7	6	100
DEC 16...	<.1	5	1	<1	<1	<1	<1	50	13	34	99
MAR 16...	--	--	--	--	--	--	--	--	--	7	100
MAY 18...	<.1	6	3	<1	<1	<1	<1	10	13	4	97
JUL 07...	<.1	5	2	<1	<1	<1	<1	30	11	8	95
AUG 24...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV												
04...	0915	--	<1	<1.0	--	<.1	--	6.0	--	2.0	--	.5
MAR												
16...	0915	<.10	--	--	<.01	--	<.10	--	<.01	--	<.01	--
MAY												
18...	1030	<.10	<1	<1.0	<.01	<.1	<.10	8.0	<.01	8.1	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL (UG/L)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV												
04...	--	<.1	--	--	.2	--	<.1	--	<.1	--	--	<.1
MAR												
16...	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01	<.01	--
MAY												
18...	<.01	.6	<.01	<.01	.2	<.01	<.1	<.01	<.1	<.01	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)
NOV											
04...	--	<.1	--	<.1	--	--	<.1	--	--	--	<.1
MAR											
16...	<.01	--	<.01	--	<.01	<.01	--	<.01	<.01	<.01	--
MAY											
18...	<.01	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.01	<.1

< Actual value is known to be less than the value shown.

DATE	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PERTHANE IN BOTTOM MATERIL (UG/KG)	SILVEX, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)
NOV											
04...	--	--	--	<.10	--	--	<1.0	--	--	--	--
MAR											
16...	<.10	<.01	<.01	--	<.01	<1	--	<.01	<.01	<.01	<.01
MAY											
18...	<.10	<.01	<.10	<1.00	--	<1	<10	<.01	--	--	--

< Actual value is known to be less than the value shown.

02051500 MEHERRIN RIVER NEAR LAWRENCEVILLE, VA

LOCATION.--Lat 36°43'00", long 77°49'55", Brunswick County, Hydrologic Unit 03010204, on right bank 50 ft (15 m) upstream from Gholson Bridge on State Highway 715, 0.6 mi (1.0 km) upstream from Allen Creek, and 3.0 mi (4.8 km) southeast of Lawrenceville.

DRAINAGE AREA.--552 mi² (1,430 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1932(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.56 ft (41.623 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 496 ft³/s (14.05 m³/s), 12.20 in/yr (310 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s (1,080 m³/s) Aug. 17, 1940, gage height, 42.0 ft (12.80 m), from floodmark, from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of velocity-area studies and records for Nottoway River near Stony Creek; minimum, 4.2 ft³/s (0.12 m³/s) Oct. 7, 8, 1954; minimum gage height, 0.72 ft (0.219 m) Sept. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,650 ft³/s (132 m³/s) at 1130 hours May 26, gage height, 15.76 ft (4.804 m), no other peak above base of 4,500 ft³/s (130 m³/s); minimum, 24 ft³/s (0.68 m³/s) Oct. 10, gage height, 1.38 ft (0.421 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	115	87	1810	1560	1700	273	258	753	214	214	140
2	33	102	88	2120	1290	1330	274	234	923	224	359	129
3	34	93	96	882	1310	1120	270	227	801	199	258	139
4	28	87	99	2700	3470	918	263	219	572	174	370	134
5	29	85	106	3070	1590	662	251	209	1650	240	250	120
6	35	90	109	1150	805	618	248	194	2120	863	217	111
7	31	90	108	643	604	780	244	184	741	412	179	108
8	27	85	104	499	487	3370	238	186	456	261	162	100
9	26	80	97	411	431	1690	260	186	370	209	183	97
10	25	80	90	343	451	865	307	173	443	185	1240	94
11	26	79	86	192	438	664	320	159	494	271	715	93
12	27	77	83	200	384	568	280	152	601	910	2830	92
13	29	75	77	318	446	509	258	147	422	2760	2640	89
14	30	74	81	269	680	462	248	142	1940	2040	680	86
15	30	74	151	268	661	426	239	137	1420	954	415	81
16	30	73	1350	314	553	417	230	135	577	914	424	80
17	31	77	1060	300	1200	452	231	132	435	734	329	88
18	31	85	496	270	2960	477	268	140	2100	374	397	97
19	30	83	321	270	1670	420	288	137	1360	278	1070	96
20	33	79	231	300	948	394	264	142	626	251	431	91
21	36	77	148	354	751	432	253	181	492	229	284	88
22	35	74	194	626	597	484	264	331	642	237	243	99
23	36	71	345	779	487	418	252	820	439	253	215	130
24	43	75	463	874	427	363	226	813	342	455	198	133
25	63	89	470	893	394	336	213	2240	280	587	182	138
26	98	100	1970	670	355	323	230	4030	265	295	171	155
27	123	106	1070	488	389	305	434	784	261	227	160	230
28	716	102	627	480	1250	285	529	468	237	195	152	222
29	586	95	469	476	---	269	398	472	228	202	150	210
30	228	91	347	470	---	262	304	737	224	223	164	190
31	144	---	287	577	---	264	---	989	---	195	163	---
TOTAL	2703	2563	11310	23016	26588	21583	8357	15358	22214	15565	15445	3660
MEAN	87.2	85.4	365	742	950	696	279	495	740	502	498	122
MAX	716	115	1970	3070	3470	3370	529	4030	2120	2760	2830	230
MIN	25	71	77	192	355	262	213	132	224	174	150	80
CFSM	.16	.16	.66	1.34	1.72	1.26	.51	.90	1.34	.91	.90	.22
IN.	.18	.17	.76	1.55	1.79	1.45	.56	1.03	1.50	1.05	1.04	.25

CAL YR 1981 TOTAL 78927 MEAN 216 MAX 4190 MIN 25 CFSM .39 IN 5.31
WTR YR 1982 TOTAL 168362 MEAN 461 MAX 4030 MIN 25 CFSM .84 IN 11.35

02051000 NORTH MEHERRIN RIVER NEAR LUNENBURG, VA

LOCATION (REVISED).--Lat 36°59'53", long 78°21'03", Lunenburg County, Hydrologic Unit 03010204, on right bank at upstream side of bridge on State Highway 40, 0.5 mi (0.8 km) downstream from Tusekiah Creek, 4.6 mi (7.4 km) upstream from Juniper Creek, and 5.2 mi (8.4 km) northwest of Lunenburg.

DRAINAGE AREA.--55.6 mi^2 (144.0 km^2).

PERIOD OF RECORD.--August 1946 to September 1980, October 1981 to September 1982.

REVISED RECORDS.--WSP 1303: 1947(M), 1949(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 333.7 ft (101.71 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to July 5, 1951, nonrecording gage at same site and datum. July 5, 1951, to July 11, 1980, water-stage recorder at site 20 ft (6 m) downstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--35 years, 53.2 ft^3/s (1.507 m^3/s), 12.99 in/yr (330 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft^3/s (408 m^3/s) Oct. 23, 1971, gage height, 28.30 ft (8.626 m), from rating curve extended above 1,700 ft^3/s (48 m^3/s) on basis of slope-area measurement of peak flow; no flow Sept. 5-21, Oct. 8-14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 48 ft (14.6 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft^3/s (62 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 24	2400	2330	66.0	13.82	4.212	July 13	1500	*2680	75.9	15.37	4.685

Minimum daily discharge, 2.7 ft^3/s (0.076 m^3/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	11	8.1	162	214	137	31	22	76	14	72	13
2	3.0	10	9.5	71	73	190	29	20	51	12	26	12
3	2.9	9.8	10	109	403	167	29	23	30	11	29	11
4	2.8	9.5	11	165	188	85	30	20	28	17	19	10
5	2.7	9.5	13	119	92	77	24	18	170	28	17	9.3
6	3.0	9.8	13	102	67	60	26	18	63	21	15	9.0
7	3.2	9.0	11	50	51	196	24	18	33	14	14	8.7
8	3.5	9.0	10	39	42	190	22	17	26	12	14	8.5
9	3.3	7.6	9.8	32	40	85	30	17	24	78	24	8.7
10	3.1	7.8	9.2	24	42	63	30	16	25	147	21	8.7
11	3.1	7.8	9.0	20	35	54	26	15	32	117	127	8.5
12	3.0	7.6	8.7	16	31	49	24	15	27	358	200	8.2
13	3.0	7.3	9.0	13	44	43	22	15	296	655	42	7.6
14	3.1	7.3	9.5	13	67	39	22	14	163	132	25	7.4
15	3.3	7.3	127	12	52	40	22	14	54	254	19	7.4
16	3.3	7.6	140	13	49	58	21	13	34	81	17	7.1
17	3.3	7.6	69	14	303	70	22	13	194	40	194	7.4
18	3.5	7.6	39	14	214	48	25	13	144	28	342	6.3
19	3.9	7.3	26	15	115	41	22	12	59	21	60	6.1
20	3.6	7.3	18	16	90	62	21	15	35	20	32	8.5
21	3.5	7.3	15	48	67	65	22	29	31	52	22	10
22	3.9	6.9	23	67	51	48	20	17	24	21	19	19
23	5.0	6.9	52	51	42	39	20	38	24	327	20	13
24	7.0	7.8	32	67	38	35	18	413	19	123	19	9.0
25	9.5	12	106	54	34	33	18	541	17	46	28	8.2
26	14	11	116	37	30	32	45	67	17	28	18	19
27	22	9.5	60	29	36	30	65	38	16	22	15	40
28	82	9.0	39	26	80	26	44	132	15	18	16	14
29	23	8.7	30	30	---	26	29	226	14	17	18	11
30	15	8.1	23	44	---	26	24	213	14	17	14	9.6
31	13	---	28	210	---	26	---	119	---	77	13	---
TOTAL	261.5	254.9	1083.8	1682	2590	2140	807	2161	1755	2808	1511	326.2
MEAN	8.44	8.50	35.0	54.3	92.5	69.0	26.9	69.7	58.5	90.6	48.7	10.9
MAX	82	12	140	210	403	196	65	541	296	655	342	40
MIN	2.7	6.9	8.1	12	30	26	18	12	14	11	13	6.1
CFSM	.15	.15	.63	.98	1.66	1.24	.48	1.25	1.05	1.63	.88	.20
IN.	.17	.17	.73	1.13	1.73	1.43	.54	1.45	1.17	1.88	1.01	.22

WTR YR 1982 TOTAL 17380.4 MEAN 47.6 MAX 655 MIN 2.7 CFSM .86 IN 11.63

02051600 GREAT CREEK NEAR COCHRAN, VA

LOCATION.--Lat 36°48'46", long 77°55'19", Brunswick County, Hydrologic Unit 03010204, on left bank at upstream side of bridge on State Highway 618, 1.4 mi (2.3 km) southwest of Cochran, and 9.5 mi (15.3 km) upstream from Roses Creek.

DRAINAGE AREA.--30.7 mi² (79.5 km²).

PERIOD OF RECORD.--May 1958 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 215.72 ft (65.751 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--24 years, 30.1 ft³/s (0.852 m³/s), 13.31 in/yr (338 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,030 ft³/s (199 m³/s) Oct. 6, 1972, gage height, 16.65 ft (5.075 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of contracted-opening measurements at gage heights 12.08 ft (3.682 m), 14.57 ft (4.441 m), and 16.65 ft (5.075 m); minimum, 0.10 ft³/s (0.003 m³/s) Oct. 11, 12, 1965, Sept. 23, 1968; minimum gage height, 1.50 ft (0.457 m) Aug. 19, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 8	0700	307	8.69	6.29	1.917	July 14	0330	*414	11.7	7.04	2.146

Minimum discharge, 0.88 ft³/s (0.025 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.94	6.6	6.6	164	96	103	20	15	11	6.0	14	6.8
2	1.5	6.2	8.2	69	51	63	19	14	16	5.0	10	6.8
3	1.9	6.0	8.5	78	145	47	19	13	14	5.4	10	7.0
4	2.0	5.6	8.5	127	120	41	20	12	10	12	9.0	7.0
5	2.0	5.8	10	86	61	38	17	12	53	11	7.4	6.0
6	1.9	7.6	9.5	46	46	36	20	11	28	13	7.2	5.2
7	1.9	7.2	8.2	35	36	90	18	10	14	8.2	6.8	4.8
8	2.0	6.4	7.8	30	30	212	17	10	11	6.6	7.0	4.4
9	1.6	5.8	7.2	25	31	74	27	10	9.2	5.6	33	4.6
10	1.7	5.8	6.8	22	37	54	26	9.2	10	21	155	4.6
11	1.9	5.8	6.6	18	28	46	21	8.5	15	12	57	4.6
12	2.4	6.2	6.4	16	25	40	20	7.6	12	48	149	4.2
13	3.0	6.0	6.4	14	48	36	18	7.6	14	66	64	4.0
14	3.3	5.8	7.2	14	55	32	17	7.2	39	210	34	3.9
15	4.0	5.6	37	14	40	30	16	6.8	18	47	23	3.9
16	5.0	5.6	64	14	46	34	16	6.4	12	45	20	3.9
17	6.0	7.4	28	16	131	42	16	6.2	19	25	52	3.9
18	6.6	10	19	17	163	32	26	6.0	117	17	33	3.6
19	8.0	7.8	14	18	73	28	20	6.0	46	13	25	4.4
20	9.0	7.0	13	23	55	34	17	8.5	23	11	18	5.6
21	8.2	6.6	12	38	45	36	19	12	36	13	14	5.0
22	9.0	6.2	17	42	40	31	17	9.2	30	15	13	8.5
23	10	6.0	24	42	33	27	16	12	20	14	12	9.8
24	12	7.2	18	58	30	24	15	23	14	14	11	7.0
25	13	11	55	42	26	24	14	28	11	10	10	5.8
26	14	8.8	71	32	24	23	30	15	10	8.2	9.0	13
27	16	7.6	41	28	39	21	48	11	9.0	7.2	8.0	30
28	30	7.4	30	24	127	20	26	11	7.8	8.0	8.2	12
29	12	6.8	24	22	---	20	19	12	7.0	33	8.2	7.8
30	8.8	6.6	19	27	---	20	16	16	6.8	15	7.4	6.4
31	7.2	---	21	51	---	20	---	14	---	14	7.0	---
TOTAL	206.84	204.4	614.9	1252	1681	1378	610	350.2	642.8	739.2	842.2	204.5
MEAN	6.67	6.81	19.8	40.4	60.0	44.5	20.3	11.3	21.4	23.8	27.2	6.82
MAX	30	11	71	164	163	212	48	28	117	210	155	30
MIN	.94	5.6	6.4	14	24	20	14	6.0	6.8	5.0	6.8	3.6
CFSM	.22	.22	.65	1.32	1.95	1.45	.66	.37	.70	.78	.89	.22
IN.	.25	.25	.75	1.52	2.04	1.67	.74	.42	.78	.90	1.02	.25

CAL YR 1981 TOTAL 5855.84 MEAN 16.0 MAX 322 MIN .94 CFSM .52 IN 7.10
WTR YR 1982 TOTAL 8726.04 MEAN 23.9 MAX 212 MIN .94 CFSM .78 IN 10.57

02052000 MEHERRIN RIVER AT EMPORIA, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°41'24", long 77°32'27", Emporia City, Hydrologic Unit 03010204, on left bank at downstream side of bridge on U.S. Highway 301 and 1.2 mi (1.9 km) upstream from Falling Run.

DRAINAGE AREA.--747 mi² (1,935 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 67.17 ft (20.473 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Prior to November 1965, low and medium flow regulated by powerplant 0.8 mi (1.3 km) above station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 686 ft³/s (19.43 m³/s), 12.47 in/yr (317 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s (598 m³/s) Oct. 8, 1972, gage height, 27.38 ft (8.345 m); minimum, 5.0 ft³/s (0.14 m³/s) Nov. 11, 1954, gage height, 1.00 ft (0.305 m); minimum daily, 8.0 ft³/s (0.23 m³/s) Nov. 8-10, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 31.5 ft (9.60 m), from floodmarks, discharge, about 40,000 ft³/s (1,100 m³/s), from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of record for station near Lawrenceville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,940 ft³/s (140 m³/s) May 26, gage height, 16.38 ft (4.993 m), no peak above base of 6,000 ft³/s (170 m³/s); minimum, 36 ft³/s (1.02 m³/s) Oct. 5, 6, 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	150	113	1140	2500	2540	378	366	1040	199	247	164
2	41	131	118	3020	1900	2320	378	328	925	203	310	153
3	40	118	120	1630	2700	1740	378	312	1140	199	310	151
4	37	108	125	2170	4000	1470	370	298	690	190	330	158
5	36	107	134	3620	2000	1110	346	282	1410	252	300	150
6	36	111	135	2630	1200	970	346	266	3100	665	218	132
7	39	105	137	1060	880	1250	330	252	1480	651	187	121
8	42	105	138	721	650	3520	328	247	670	330	172	116
9	40	100	129	565	520	4080	354	245	468	242	190	109
10	39	96	121	450	540	1770	405	235	468	263	877	107
11	37	96	113	290	620	1150	430	221	485	226	1220	107
12	36	95	109	195	500	944	408	208	702	334	2460	107
13	36	94	103	185	460	822	366	199	550	2820	4010	107
14	36	92	108	200	660	725	344	191	1080	2660	1740	103
15	38	91	176	210	800	665	330	185	2630	2120	656	100
16	40	90	714	215	620	653	320	175	958	868	462	96
17	40	98	1780	225	1000	690	316	171	550	1230	514	99
18	42	102	827	260	3500	705	366	169	1620	552	434	107
19	45	105	445	300	3200	658	405	175	2700	350	1050	121
20	44	108	305	361	1700	598	386	169	1100	270	764	103
21	41	99	194	450	1200	603	356	188	627	235	370	100
22	44	92	199	740	900	675	348	310	752	240	270	104
23	50	92	279	1030	800	641	346	500	634	286	238	116
24	57	95	485	1390	692	545	318	1390	434	290	220	163
25	91	98	553	1350	617	492	294	1420	346	782	210	159
26	104	112	1550	1060	548	468	320	4180	296	425	198	169
27	142	126	1940	800	579	439	482	2950	261	280	190	185
28	273	129	1000	680	1930	410	755	873	244	221	185	265
29	916	124	673	560	---	386	598	605	235	195	172	256
30	372	114	481	600	---	378	452	880	215	266	175	190
31	196	---	375	800	---	374	---	1140	---	244	183	---
TOTAL	3071	3183	13679	28907	37216	33791	11553	19130	27810	18088	18862	4118
MEAN	99.1	106	441	932	1329	1090	385	617	927	583	608	137
MAX	916	150	1940	3620	4000	4080	755	4180	3100	2820	4010	265
MIN	36	90	103	185	460	374	294	169	215	190	172	96
CFSM	.13	.14	.59	1.25	1.78	1.46	.52	.83	1.24	.78	.81	.18
IN.	.15	.16	.68	1.44	1.85	1.68	.58	.95	1.38	.90	.94	.21

CAL YR 1981 TOTAL 96525 MEAN 264 MAX 3550 MIN 36 CFSM .35 IN 4.81
WTR YR 1982 TOTAL 219408 MEAN 601 MAX 4180 MIN 36 CFSM .81 IN 10.93

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to September 1971, October 1972 to September 1978.
WATER TEMPERATURES: April 1968 to September 1971, October 1972 to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
NOV 05...	0800	105	99	7.1	14.5	24	7.9	310	250	25	5.8	2.6
DEC 15...	1345	185	95	6.2	4.0	11	13.0	650	2400	24	5.9	2.3
MAR 17...	0830	680	68	7.1	10.5	15	10.9	55	75	18	4.2	1.9
MAY 19...	0830	175	91	7.4	23.0	6.0	6.1	12	110	27	6.2	2.7
JUL 08...	0830	356	74	7.4	24.5	52	7.7	81	180	26	6.0	2.7
AUG 25...	1230	215	73	6.2	24.0	27	6.6	--	--	23	5.4	2.4

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
NOV 05...	9.3	2.4	27	5.9	10	.1	15	82	68	.06	.090	.64
DEC 15...	8.6	2.0	29	4.3	7.9	<.1	16	68	65	.08	.030	.32
MAR 17...	4.8	1.5	18	6.4	4.2	<.1	15	57	49	.29	.210	.58
MAY 19...	6.0	1.5	33	2.0	4.7	.1	13	58	57	<.10	.050	.75
JUL 08...	6.2	1.3	28	5.0	4.5	<.1	16	68	59	.10	.090	.70
AUG 25...	5.1	1.7	25	4.0	3.4	.1	17	66	54	<.10	.040	.70

< Actual value is known to be less than the value shown.

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
NOV 05...	.050	.050	.020	1	<1	100	31	2	<1	10	10
DEC 15...	.050	.020	<.010	1	<1	<100	16	2	3	20	10
MAR 17...	.040	.020	<.010	--	--	--	--	--	--	--	--
MAY 19...	.110	.020	<.010	1	1	<100	31	2	1	20	10
JUL 08...	.070	.010	.010	1	<1	<100	34	<1	<1	10	10
AUG 25...	.090	.020	<.010	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)
NOV 05...	<1	<1	6	2	1000	390	3	1	110	90	.3
DEC 15...	<1	<1	8	3	1200	370	1	<1	90	73	<.1
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	4	1	10	10	1100	360	4	2	240	180	.4
JUL 08...	1	2	4	3	1800	300	<1	1	170	110	.1
AUG 25...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 05...	.2	2	1	<1	<1	<1	<1	30	<4	15	100
DEC 15...	<.1	2	1	<1	<1	<1	<1	50	4	12	99
MAR 17...	--	--	--	--	--	--	--	--	--	16	87
MAY 19...	<.1	4	4	<1	<1	<1	<1	20	<3	15	96
JUL 08...	<.1	3	1	<1	<1	<1	<1	30	<4	47	99
AUG 25...	--	--	--	--	--	--	--	--	--	35	94

< Actual value is known to be less than the value shown.

02052500 FOUNTAINS CREEK NEAR BRINK, VA

LOCATION.--Lat 36°36'55", long 77°42'00", Greensville County, Hydrologic Unit 03010204, on left bank 30 ft (9 m) upstream from bridge on State Highway 603, 0.3 mi (0.5 km) downstream from Quarrel Creek, 3.6 mi (5.8 km) west of Brink, and 10 mi (16 km) southwest of Emporia.

DRAINAGE AREA.--65.2 mi^2 (168.9 km^2).

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1980, published as Fontaine Creek near Brink.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 152.59 ft (46.509 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of doubtful gage-height record, Sept. 1-30, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--29 years, 67.1 ft^3/s (1.900 m^3/s), 13.98 in/yr (355 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft^3/s (453 m^3/s) Oct. 6, 1972, gage height, 24.14 ft (7.358 m), from floodmark, from rating curve extended above 3,000 ft^3/s (85 m^3/s); no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 575 ft^3/s (16.3 m^3/s) Feb. 18, gage height, 8.87 ft (2.704 m), no peak above base of 850 ft^3/s (24 m^3/s); no flow Oct. 1 to Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	18	221	71	366	27	17	157	2.3	8.0	.37
2	.00	.00	20	169	66	198	25	14	45	2.0	8.8	.42
3	.00	.00	23	100	291	115	25	20	42	2.2	6.4	.50
4	.00	.00	25	149	398	89	32	16	82	3.8	4.8	.46
5	.00	.00	26	165	283	81	25	10	275	11	2.9	.38
6	.00	.00	26	88	139	91	23	8.8	337	20	1.8	.35
7	.00	.00	27	54	87	251	20	7.7	171	18	1.1	.33
8	.00	.00	27	39	65	519	21	7.0	53	12	5.1	.30
9	.00	.04	26	31	55	359	36	6.4	37	7.7	22	.30
10	.00	.08	26	24	63	160	43	5.1	32	10	31	.27
11	.00	.18	26	18	61	103	35	3.6	31	12	24	.26
12	.00	.40	25	13	51	86	29	3.1	29	7.4	31	.24
13	.00	.73	24	15	135	74	24	3.1	25	5.1	20	.23
14	.00	1.1	26	16	212	64	22	2.6	27	4.1	12	.22
15	.00	1.9	54	16	142	60	20	6.4	22	4.6	8.0	.21
16	.00	2.7	96	18	124	80	19	12	18	5.4	11	.20
17	.00	5.9	66	20	350	95	19	4.6	18	4.3	21	.20
18	.00	11	43	25	539	77	31	4.6	83	2.3	31	.21
19	.00	13	31	32	377	61	32	4.8	138	1.6	18	.23
20	.00	13	22	70	203	63	24	7.4	67	.90	11	.25
21	.00	13	18	90	125	71	24	12	32	.75	6.1	.30
22	.00	13	21	170	96	66	23	12	19	.75	4.3	.33
23	.00	13	25	190	78	53	19	12	14	.75	3.6	.29
24	.00	14	27	338	64	44	16	29	8.8	.83	3.4	.26
25	.00	15	74	251	55	40	14	36	6.1	1.4	2.2	.24
26	.00	15	132	144	46	38	29	27	4.3	5.4	1.4	.45
27	.00	16	96	81	98	33	60	27	2.6	2.4	.90	1.7
28	.00	16	64	69	475	30	46	75	2.6	1.1	.58	4.3
29	.00	16	48	55	---	27	33	38	2.6	2.1	.47	2.3
30	.00	15	37	54	---	26	23	314	2.9	4.3	.34	1.8
31	.00	---	35	63	---	27	---	351	---	4.1	.36	---
TOTAL	.00	196.03	1234	2788	4749	3447	819	1097.2	1783.9	160.58	302.55	17.90
MEAN	.000	6.53	39.8	89.9	170	111	27.3	35.4	59.5	5.18	9.76	.60
MAX	.00	16	132	338	539	519	60	351	337	20	31	4.3
MIN	.00	.00	18	13	46	26	14	2.6	2.6	.75	.34	.20
CFSM	.000	.10	.61	1.38	2.61	1.70	.42	.54	.91	.08	.15	.009
IN.	.00	.11	.70	1.59	2.71	1.97	.47	.63	1.02	.09	.17	.01

CAL YR 1981 TOTAL 5090.38 MEAN 13.9 MAX 137 MIN .00 CFSM .21 IN 2.90
WTR YR 1982 TOTAL 16595.16 MEAN 45.5 MAX 539 MIN .00 CFSM .70 IN 9.47

02053800 SOUTH FORK ROANOKE RIVER NEAR SHAWSVILLE, VA

LOCATION.--Lat 37°08'24", long 80°16'00", Montgomery County, Hydrologic Unit 03010101, on right bank 95 ft (29 m) downstream from bridge on State Highway 637, 0.3 mi (0.5 km) downstream from Georges Run, 1.3 mi (2.1 km) downstream from Elliott Creek, and 2.0 mi (3.2 km) southwest of Shawsville.

DRAINAGE AREA.--110 mi² (285 km²).

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,361.87 ft (415.098 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1974, water-stage recorder, and Aug. 26, 1974, to July 24, 1975, nonrecording gage at site 95 ft (29 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 107 ft³/s (3.030 m³/s), 13.21 in/yr (336 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 21, 1972, gage height, 11.12 ft (3.389 m), from high-water mark in well, from rating curve extended above 3,700 ft³/s (100 m³/s) on basis of slope-area measurement of peak flow; minimum, 7.5 ft³/s (0.21 m³/s) July 27-29, 1966, gage height, 0.37 ft (0.113 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1959, reached a stage of 9.89 ft (3.014 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (23 m³/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft³/s)	(m³/s)	(ft)	(m)			(ft³/s)	(m³/s)	(ft)	(m)
Jan. 3	1230	1070	30.3	3.58	1.091	Mar. 20	0230	866	24.5	3.07	0.936
Feb. 3	1600	*1870	53.0	4.55	1.387	June 10	1830	1090	30.9	3.42	1.042

Minimum discharge, 9.0 ft³/s (0.25 m³/s) Dec. 10, gage height, 0.64 ft (0.195 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	30	27	80	127	110	115	146	86	53	73	39
2	19	28	36	94	92	143	102	130	79	48	53	38
3	19	27	33	600	1040	231	102	117	70	49	46	35
4	18	26	32	683	724	219	93	106	84	62	44	31
5	18	25	33	377	371	216	86	97	141	53	41	29
6	17	26	29	210	250	247	91	91	110	51	58	28
7	18	24	28	145	186	391	80	86	91	46	84	28
8	18	23	28	108	150	404	82	84	77	62	115	27
9	17	23	27	89	165	311	93	79	80	75	327	27
10	18	23	21	58	150	247	82	75	351	148	143	27
11	18	23	20	50	132	213	77	70	367	79	108	28
12	18	22	21	45	121	192	73	66	186	62	137	27
13	18	22	21	42	115	171	71	65	426	71	93	26
14	19	22	30	40	104	148	71	62	379	99	77	28
15	19	22	65	39	102	168	70	60	228	71	66	29
16	19	22	74	39	137	168	66	59	162	71	62	28
17	20	23	57	40	295	171	80	60	137	80	71	27
18	20	23	49	45	431	156	106	56	115	88	68	25
19	23	22	34	50	323	168	88	59	102	102	59	25
20	23	24	33	54	264	580	84	77	88	71	52	26
21	23	23	33	113	225	371	84	82	79	60	48	27
22	23	21	41	135	192	283	79	80	79	55	44	46
23	27	21	120	108	153	225	75	84	75	56	42	35
24	31	26	119	100	139	189	73	95	66	108	39	29
25	29	29	85	90	124	165	73	84	65	68	39	28
26	41	28	68	70	108	180	117	70	62	58	38	42
27	288	27	59	60	100	148	210	77	62	51	36	66
28	80	28	53	58	108	137	331	113	63	48	36	41
29	48	26	51	60	---	126	234	119	59	46	35	34
30	38	24	42	60	---	119	177	104	58	46	32	31
31	33	---	42	88	---	115	---	88	---	84	36	---
TOTAL	1032	733	1411	3830	6428	6712	3165	2641	4027	2121	2202	957
MEAN	33.3	24.4	45.5	124	230	217	106	85.2	134	68.4	71.0	31.9
MAX	288	30	120	683	1040	580	331	146	426	148	327	66
MIN	12	21	20	39	92	110	66	56	58	46	32	25
CFSM	.30	.22	.41	1.13	2.09	1.97	.96	.78	1.22	.62	.65	.29
IN.	.35	.25	.48	1.30	2.17	2.27	1.07	.89	1.36	.72	.74	.32

CAL YR 1981 TOTAL 16628 MEAN 45.6 MAX 576 MIN 11 CFSM .42 IN 5.62
WTR YR 1982 TOTAL 35259 MEAN 96.6 MAX 1040 MIN 12 CFSM .88 IN 11.92

02054500 ROANOKE RIVER AT LAFAYETTE, VA

LOCATION.--Lat 37°14'11", long 80°12'34", Montgomery County, Hydrologic Unit 03010101, on right bank 120 ft (37 m) upstream from bridge on State Highway 603 at Lafayette, 0.4 mi (0.6 km) downstream from confluence of North and South Forks, and 1.1 mi (1.8 km) upstream from Cove Hollow.

DRAINAGE AREA.--257 mi^2 (666 km^2).

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1333: 1944-47(M), 1948-49.

GAGE.--Water-stage recorder. Datum of gage is 1,174.47 ft (357.978 m) National Geodetic Vertical Datum of 1929. Prior to July 30, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 12 to Aug. 23, which are fair. Occasional diurnal fluctuation caused by meat-processing plant above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 240 ft^3/s (6.797 m^3/s), 12.68 in/yr (322 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft^3/s (694 m^3/s) June 21, 1972, gage height, 15.60 ft (4.755 m), from floodmarks, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 10 ft^3/s (0.28 m^3/s) Jan. 14, 15, 18, 19, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 12.2 ft (3.72 m), from information by local residents, discharge, 19,000 ft^3/s (538 m^3/s), from rating curve extended above 12,000 ft^3/s (340 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,510 ft^3/s (128 m^3/s) at 1630 hours Feb. 3, gage height, 7.27 ft (2.216 m), no other peak above base of 3,500 ft^3/s (99 m^3/s); minimum, 27 ft^3/s (0.76 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	50	54	118	296	249	245	318	215	102	120	68
2	32	45	68	166	245	380	224	278	194	93	95	66
3	34	45	66	1250	2990	624	219	253	162	96	72	58
4	34	43	63	1920	1840	542	203	224	178	118	64	56
5	34	41	63	962	894	470	190	203	240	99	65	54
6	32	43	58	514	619	492	198	186	211	93	75	52
7	32	39	56	365	455	943	182	178	178	81	115	50
8	30	41	54	283	370	965	182	170	154	84	270	50
9	30	37	52	228	360	701	198	158	178	128	500	50
10	32	41	45	136	332	558	194	146	365	186	300	50
11	32	41	41	98	287	470	182	136	663	128	250	50
12	32	41	43	90	257	425	170	128	341	105	280	47
13	32	41	43	86	245	375	166	121	1610	235	190	47
14	32	41	58	83	219	332	166	118	960	170	150	45
15	32	41	128	81	215	390	162	111	525	135	130	47
16	32	41	211	80	266	445	154	108	370	115	110	45
17	34	43	132	76	795	450	158	108	300	105	120	41
18	34	43	108	81	1060	405	207	136	253	170	100	41
19	35	41	81	95	740	375	174	162	215	135	90	41
20	35	43	61	105	603	899	162	146	186	120	82	43
21	37	45	61	341	509	740	162	158	166	105	77	45
22	39	43	84	445	420	613	154	232	158	95	73	61
23	43	41	211	314	351	509	146	194	150	105	71	61
24	52	52	287	225	314	435	139	245	132	130	68	50
25	52	58	203	200	278	385	136	203	128	100	68	47
26	66	56	158	170	249	380	190	166	128	90	66	56
27	440	52	132	140	245	327	405	178	132	78	66	99
28	162	52	114	125	249	296	745	314	128	70	66	68
29	87	50	105	130	---	274	514	346	118	70	61	56
30	63	47	90	143	---	257	390	300	108	74	58	54
31	54	---	84	170	---	249	---	240	---	82	63	---
TOTAL	1743	1337	3014	9220	15703	14955	6717	5964	8846	3497	3915	1598
MEAN	56.2	44.6	97.2	297	561	482	224	192	295	113	126	53.3
MAX	440	58	287	1920	2990	965	745	346	1610	235	500	99
MIN	28	37	41	76	215	249	136	108	108	70	58	41
CFSM	.22	.17	.38	1.16	2.18	1.88	.87	.75	1.15	.44	.49	.21
IN.	.25	.19	.44	1.33	2.27	2.16	.97	.86	1.28	.51	.57	.23

CAL YR 1981 TOTAL 31463 MEAN 86.2 MAX 904 MIN 23 CFSM .34 IN 4.55
WTR YR 1982 TOTAL 76509 MEAN 210 MAX 2990 MIN 28 CFSM .82 IN 11.07

02055000 ROANOKE RIVER AT ROANOKE, VA

LOCATION.--Lat 37°15'30", long 79°56'20", Roanoke City, Hydrologic Unit 03010101, on left bank 50 ft (15 m) downstream from Walnut Street Bridge, 3.2 mi (5.1 km) upstream from Tinker Creek, and at mile 360.6 (580.2 km).

DRAINAGE AREA.--395 mi² (1,023 km²).

PERIOD OF RECORD.--February 1899 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for July 1896 to January 1899 published in WSP 11, 15, and 27, and 20th Annual Report, Part 4, are unreliable, due to doubtful gage-height record, and should not be used.

REVISED RECORDS.--WSP 972: 1928, 1930, 1933. WSP 1433: 1899-1904, 1914-17(M), 1918-24, 1925-27(M), 1929-34(M), 1935, 1936-39(M). WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1940(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 906.84 ft (276.405 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage on downstream side of highway bridge 50 ft (15 m) upstream at same datum.

REMARKS.--Records good. Prior to 1949, diurnal fluctuation at low flow caused by powerplants above station. Appalachian Power Co. gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--83 years, 371 ft³/s (10.51 m³/s), 12.75 in/yr (324 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft³/s (716 m³/s) June 21, 1972, gage height, 19.61 ft (5.977 m), from floodmarks; practically no flow Dec. 23, 1909, Dec. 19, 1963, when flow was retarded by freezing, gage height, 0.0 ft (0.00 m); minimum daily discharge, 19 ft³/s (0.54 m³/s) Aug. 29, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	1600	3310	93.7	5.28	1.609	June 13	1730	4200	119	6.09	1.856
Feb. 3	2100	*6560	186	7.97	2.429						

Minimum discharge, 11 ft³/s (0.31 m³/s) Dec. 11, gage height, 0.09 ft (0.027 m), result of freezeup; minimum daily, 30 ft³/s (0.85 m³/s) Oct. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	81	67	191	419	440	319	442	315	144	144	91
2	50	74	67	219	406	641	293	380	289	132	116	79
3	43	69	72	1350	3960	889	289	338	247	142	97	70
4	50	64	69	2840	3420	806	272	300	590	163	87	67
5	48	62	65	1690	1640	692	251	272	739	149	86	62
6	39	59	64	864	1170	686	258	247	500	125	95	64
7	32	56	60	590	825	1230	240	230	346	114	147	53
8	31	53	57	447	652	1430	230	223	375	170	375	56
9	33	50	56	363	560	1040	244	209	669	144	669	54
10	33	51	51	258	450	819	244	188	607	188	397	54
11	38	51	39	152	400	686	223	174	967	184	338	56
12	39	50	51	240	380	624	212	160	601	139	272	54
13	38	50	51	226	350	546	205	152	2500	311	223	51
14	38	50	72	205	330	485	202	144	1950	216	174	53
15	38	50	147	188	310	552	198	136	974	167	149	54
16	39	50	268	150	400	652	195	132	658	157	132	54
17	39	50	202	120	1180	681	202	129	500	144	160	50
18	40	48	147	139	1850	630	233	144	410	233	136	50
19	43	46	121	155	1200	579	216	198	342	205	129	48
20	40	44	86	152	948	974	202	174	296	157	112	48
21	30	46	77	315	788	967	198	212	258	129	103	60
22	30	47	116	664	669	838	188	265	233	116	93	152
23	42	46	149	485	600	704	177	265	226	147	87	74
24	42	69	402	438	550	613	170	279	202	157	84	67
25	46	60	307	410	500	546	167	410	198	155	82	60
26	112	60	244	300	420	520	265	286	191	118	79	147
27	763	59	198	210	370	452	367	268	184	105	76	118
28	326	56	163	261	400	397	857	419	184	99	77	101
29	160	53	144	261	---	363	721	531	167	91	72	79
30	112	50	127	226	---	338	541	433	157	101	69	67
31	93	---	125	240	---	323	---	350	---	116	69	---
TOTAL	2547	1654	3864	14349	25147	21143	8379	8090	15875	4718	4929	2093
MEAN	82.2	55.1	125	463	898	682	279	261	529	152	159	69.8
MAX	763	81	402	2840	3960	1430	857	531	2500	311	669	152
MIN	30	44	39	120	310	323	167	129	157	91	69	48
CFSM	.21	.14	.32	1.17	2.27	1.73	.71	.66	1.34	.39	.40	.18
IN.	.24	.16	.36	1.35	2.37	1.99	.79	.76	1.50	.44	.46	.20

CAL YR 1981 TOTAL 41533 MEAN 114 MAX 1370 MIN 19 CFSM .29 IN 3.91
WTR YR 1982 TOTAL 112788 MEAN 309 MAX 3960 MIN 30 CFSM .78 IN 10.62

02055100 TINKER CREEK NEAR DALEVILLE, VA

LOCATION.--Lat 37°25'03", long 79°56'08", Botetourt County, Hydrologic Unit 03010101, on left bank 1,100 ft (335 m) downstream from Norfolk and Western Railway bridge, 0.2 mi (0.3 km) downstream from unnamed tributary, 0.5 mi (0.8 km) south of Glebe Mills, and 1.3 mi (2.1 km) northwest of Daleville.

DRAINAGE AREA.--11.7 mi^2 (30.3 km^2).

PERIOD OF RECORD.--April 1956 to current year.

REVISED RECORDS.--WSP 1904: 1958-60(P). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,217.47 ft (371.085 m) National Geodetic Vertical Datum of 1929 (Norfolk and Western Railway bench mark).

REMARKS.--Records good except those for periods of doubtful or no gage-height record, Apr. 10 to May 13 and May 23 to June 24, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--26 years, 11.4 ft^3/s (0.323 m^3/s), 13.23 in/yr (336 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft^3/s (113 m^3/s) June 21, 1972, gage height, 9.82 ft (2.993 m), from rating curve extended above 100 ft^3/s (2.8 m^3/s) on basis of contracted-opening measurement at gage height 9.82 ft (2.993 m) and slope-area measurements at gage heights 8.52 ft (2.597 m) and 9.82 ft (2.993 m); minimum, 0.20 ft^3/s (0.006 m^3/s) Jan. 24, 1961, result of freezeup; minimum daily, 0.90 ft^3/s (0.025 m^3/s) July 26, 1966; minimum gage height, 0.99 ft (0.302 m) June 12, 24, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1940 reached a stage of 9.0 ft (2.74 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 272 ft^3/s (7.70 m^3/s) at 1230 hours Feb. 3, gage height, 3.89 ft (1.186 m), no other peak above base of 250 ft^3/s (7.1 m^3/s); minimum, 0.90 ft^3/s (0.025 m^3/s) Oct. 7, 8, 9; minimum gage height, 1.13 ft (0.344 m) Nov. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.8	2.3	6.1	12	13	9.6	12	5.8	4.8	3.7	4.1
2	1.2	1.7	2.5	6.4	11	19	9.3	11	5.2	4.2	3.4	3.0
3	1.2	1.6	2.2	26	132	18	11	10	5.2	4.6	3.3	2.7
4	1.3	1.5	2.1	38	45	17	10	9.5	7.0	5.1	3.1	2.5
5	1.3	1.5	2.0	17	29	15	11	9.0	11	4.8	3.1	2.4
6	1.2	1.5	1.9	11	23	16	12	8.0	9.0	4.3	18	2.5
7	.98	1.8	1.9	9.5	19	34	10	7.8	8.0	4.0	12	2.6
8	.97	1.9	1.8	7.9	15	23	7.0	7.4	6.8	5.4	15	2.4
9	.99	1.9	1.7	7.1	15	20	14	7.0	7.2	4.9	12	2.4
10	1.1	1.9	2.0	5.5	13	18	10	6.4	28	4.2	8.0	3.7
11	1.2	1.8	1.3	5.7	12	17	7.5	5.8	24	8.0	6.4	2.5
12	1.2	1.7	1.6	5.5	11	21	7.0	5.6	16	9.2	5.9	2.3
13	1.2	1.7	1.7	5.2	11	19	6.8	5.0	70	5.7	5.3	2.2
14	1.1	1.7	2.0	5.3	9.9	17	6.6	4.6	50	5.6	5.0	3.7
15	1.2	1.7	8.7	5.0	9.8	17	6.6	4.4	35	4.6	4.7	3.8
16	1.5	1.7	8.8	4.5	17	17	6.0	4.4	20	4.3	4.5	2.2
17	1.2	1.7	6.4	3.0	47	15	7.0	4.4	15	4.0	4.5	2.0
18	1.4	1.6	5.6	4.0	30	14	8.0	4.0	13	3.9	7.1	1.9
19	1.3	1.6	4.0	4.2	25	14	6.0	4.2	11	3.8	4.8	2.1
20	1.2	1.7	3.0	4.7	21	13	6.0	5.2	10	3.6	4.0	2.5
21	1.4	1.6	2.5	22	18	13	5.8	5.0	8.5	3.5	3.5	3.0
22	1.3	1.5	5.4	12	16	12	5.6	4.8	7.0	3.4	3.0	7.3
23	1.5	1.5	13	8.3	15	11	6.0	5.0	6.5	16	4.0	4.9
24	1.7	2.3	7.1	7.4	13	11	5.6	5.3	5.5	13	3.0	2.9
25	2.0	2.2	5.5	6.5	12	17	5.4	5.0	5.1	6.6	2.9	2.5
26	3.0	2.1	4.6	6.0	12	15	11	4.5	5.0	4.9	2.7	8.6
27	28	2.1	4.2	5.6	13	13	25	4.9	5.2	4.2	3.9	7.7
28	5.7	1.9	3.7	5.6	12	12	23	4.8	4.9	4.0	3.0	4.5
29	3.1	1.8	3.3	5.7	---	11	17	5.0	4.6	3.8	2.7	3.5
30	2.3	1.7	3.0	5.8	---	10	15	5.8	5.3	3.9	2.5	3.1
31	1.9	---	3.2	10	---	10	---	5.0	---	4.0	2.7	---
TOTAL	75.74	52.7	119.0	276.5	618.7	492	290.8	190.8	414.8	166.3	167.7	101.5
MEAN	2.44	1.76	3.84	8.92	22.1	15.9	9.69	6.15	13.8	5.36	5.41	3.38
MAX	29	2.3	13	38	132	34	25	12	70	16	18	8.6
MIN	.97	1.5	1.3	3.0	9.8	10	5.4	4.0	4.6	3.4	2.5	1.9
CFSM	.21	.15	.33	.76	1.89	1.36	.83	.53	1.18	.46	.46	.29
IN.	.24	.17	.38	.88	1.97	1.56	.92	.61	1.32	.53	.53	.32

CAL YR 1981 TOTAL 1156.88 MEAN 3.17 MAX 29 MIN .96 CFSM .27 IN 3.68
WTR YR 1982 TOTAL 2966.54 MEAN 8.13 MAX 132 MIN .97 CFSM .70 IN 9.43

02056000 ROANOKE RIVER AT NIAGARA, VA

LOCATION.--Lat 37°15'18", long 79°52'18", Roanoke County, Hydrologic Unit 03010101, on right bank 200 ft (60 m) downstream from powerplant of Appalachian Power Co. at Niagara, 2 mi (3 km) downstream from Tinker Creek, 2.1 mi (3.4 km) southeast of Vinton, and at mile 355.3 (571.7 km).

DRAINAGE AREA.--512 mi^2 (1,326 km^2).

PERIOD OF RECORD.--July 1926 to current year.

REVISED RECORDS.--WSP 972: 1927(M), 1929(M), 1934(M), 1937(M). WSP 1303: 1928, 1930, 1933-38, 1940. WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1930(M), 1933(M), 1935-36(M), 1938(M), 1940, 1944-45(M), 1948-49(M), 1951(M), 1955(M), 1960(M), 1967(M), 1969(M).

GAGE.--Water-stage recorder. Datum of gage is 820.15 ft (249.982 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for period of no gage-height record, Aug. 19 to Sept. 30, which are fair. Flow regulated by dam and powerplant 200 ft (60 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 509 ft^3/s (14.41 m^3/s), 13.50 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,300 ft^3/s (830 m^3/s) Apr. 27, 1978, gage height, 19.12 ft (5.828 m), from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement at gage height 18.98 ft (5.785 m); minimum, 1.0 ft^3/s (0.028 m^3/s) Oct. 16, 20, 1956; minimum daily, 8 ft^3/s (0.23 m^3/s) Oct. 9, 1954; minimum gage height, 0.17 ft (0.052 m) Aug. 25, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft^3/s (99 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1015	4060	115	8.20	2.499	June 13	1710	5250	149	9.17	2.795
Feb. 3	1715	*8340	236	11.17	3.405						

Minimum discharge, 16 ft^3/s (0.45 m^3/s) Nov. 7, gage height, 0.55 ft (0.168 m); minimum daily, 34 ft^3/s (0.96 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	158	134	337	559	542	430	580	418	229	219	150
2	161	224	144	316	528	587	408	501	391	218	241	130
3	93	117	138	1730	4830	1040	331	460	333	225	175	110
4	94	159	139	3280	4210	996	363	412	703	273	164	105
5	77	133	129	2040	1800	862	398	366	958	278	166	100
6	95	121	126	1070	1220	845	351	342	654	219	226	105
7	91	135	125	747	906	1430	333	314	505	206	358	85
8	90	123	122	569	718	1810	321	297	433	289	562	90
9	93	113	117	480	680	1310	322	296	870	237	889	86
10	91	105	185	365	648	1030	332	293	863	260	558	84
11	93	92	91	211	542	874	296	254	1190	292	438	90
12	94	107	95	292	521	790	283	253	811	267	402	86
13	93	189	136	307	479	699	284	251	3360	477	314	80
14	93	102	174	298	432	641	282	200	2670	336	279	85
15	93	96	238	279	387	720	280	247	1390	277	228	90
16	89	125	383	266	461	851	285	172	932	252	230	86
17	87	131	322	198	1250	894	253	259	703	241	243	76
18	85	95	240	227	2230	846	280	206	592	276	236	80
19	88	99	226	246	1510	769	292	299	471	375	210	78
20	87	151	139	248	1190	1130	278	298	422	268	180	75
21	116	95	149	528	991	1200	276	261	369	238	170	100
22	107	93	213	791	821	1040	265	322	339	193	150	250
23	105	98	230	612	693	886	297	351	328	217	140	120
24	86	205	486	579	618	773	256	361	298	303	135	110
25	129	103	402	523	571	683	253	540	292	243	130	95
26	222	147	315	468	420	697	393	363	287	200	130	230
27	1130	131	271	365	477	567	471	381	272	196	120	190
28	514	99	281	350	510	528	957	551	256	182	120	160
29	278	100	211	365	---	545	832	659	259	171	115	130
30	209	92	220	346	---	453	660	593	262	195	110	110
31	177	---	196	276	---	446	---	470	---	169	110	---
TOTAL	4894	3738	6377	18709	30202	26484	11062	11152	21631	7802	7748	3366
MEAN	158	125	206	604	1079	854	369	360	721	252	250	112
MAX	1130	224	486	3280	4830	1810	957	659	3360	477	889	250
MIN	34	92	91	198	387	446	253	172	256	169	110	75
CFSM	.31	.24	.40	1.18	2.11	1.67	.72	.70	1.41	.49	.49	.22
IN.	.36	.27	.46	1.36	2.19	1.92	.80	.81	1.57	.57	.56	.24

CAL YR 1981 TOTAL 72389 MEAN 198 MAX 1600 MIN 34 CFSM .39 IN 5.26
WTR YR 1982 TOTAL 153165 MEAN 420 MAX 4830 MIN 34 CFSM .82 IN 11.13

02056650 BACK CREEK NEAR DUNDEE, VA

LOCATION.--Lat 37°13'40", long 79°52'06", Roanoke County, Hydrologic Unit 03010101, on right bank at upstream side of bridge on State Highway 660, 0.9 mi (1.4 km) upstream from Horseshoe Branch, 1.1 mi (1.8 km) southeast of Dundee, 2.8 mi (4.5 km) west of Hardy Post Office, and at mile 2.4 (3.9 km).

DRAINAGE AREA.--56.8 mi² (147.1 km²).

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 822.67 ft (250.750 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 4, 1975, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, June 28 to Aug. 10, which are fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 59.0 ft³/s (1.671 m³/s), 14.11 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s (212 m³/s) May 29, 1976, gage height, 15.00 ft (4.572 m), from floodmarks; minimum daily, 0.90 ft³/s (0.025 m³/s) Aug. 30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of May 30, 1971, and June 21, 1972, reached a stage of 17.5 ft (5.33 m) and 20.0 ft (6.10 m), respectively, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 3	1145	704	19.9	4.77	1.454	June 10	2020	*1130	32.0	5.97	1.820
Feb. 3	1500	1040	29.5	5.73	1.747	June 13	1315	733	20.8	4.86	1.481

Minimum discharge, 2.1 ft³/s (0.059 m³/s) Oct. 1, 2, gage height, 0.41 ft (0.125 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	8.4	6.9	43	110	47	37	46	27	18	15	12
2	2.2	7.7	9.5	57	54	68	34	43	24	17	17	14
3	2.2	7.2	9.4	312	489	140	34	39	19	16	13	12
4	2.5	6.9	8.7	289	279	113	31	35	20	18	11	9.3
5	2.8	6.7	8.7	162	139	94	29	34	62	20	10	8.2
6	2.7	6.4	8.1	89	97	105	31	30	37	16	110	7.9
7	2.5	5.9	7.5	64	73	215	28	28	27	14	70	7.6
8	2.4	5.7	7.3	48	59	187	27	27	26	21	50	7.2
9	2.4	5.8	6.6	37	63	132	32	25	57	18	60	7.1
10	2.4	6.0	6.1	23	59	102	31	23	259	16	45	7.2
11	2.5	6.1	5.6	25	48	86	27	21	222	20	59	7.3
12	2.9	6.1	6.6	26	41	76	26	20	91	30	100	7.1
13	3.1	6.1	7.0	24	39	67	26	18	407	35	50	6.6
14	3.1	6.1	8.0	23	36	59	26	17	205	22	35	6.5
15	3.1	5.9	26	21	34	69	25	17	108	19	27	8.1
16	4.1	5.9	56	18	40	73	27	16	76	17	24	7.3
17	2.9	6.0	26	14	169	75	26	16	61	16	22	6.3
18	2.9	6.1	19	17	208	68	31	15	49	25	20	5.7
19	2.8	6.1	15	18	150	64	26	15	41	21	17	5.4
20	2.8	6.3	12	20	121	73	25	15	34	16	15	5.7
21	2.8	6.2	10	53	98	76	25	16	30	14	15	6.9
22	3.1	5.9	15	70	79	68	24	25	26	13	13	30
23	4.2	5.7	37	35	65	62	24	18	27	14	13	15
24	7.4	7.1	46	32	57	57	23	18	23	60	13	10
25	7.5	9.0	30	28	49	54	22	46	24	45	12	9.2
26	14	8.3	26	23	42	57	64	26	39	24	12	18
27	152	7.5	22	24	39	46	66	25	34	17	11	47
28	37	7.0	20	26	53	42	73	40	40	15	11	17
29	17	6.9	18	26	---	40	61	39	25	14	11	13
30	13	6.5	15	24	---	38	54	28	19	13	9.6	12
31	11	---	14	44	---	37	---	25	---	13	9.7	---
TOTAL	323.7	197.5	513.0	1715	2790	2490	1015	806	2139	637	900.3	336.6
MEAN	10.4	6.58	16.5	55.3	99.6	80.3	33.8	26.0	71.3	20.5	29.0	11.2
MAX	152	9.0	56	312	489	215	73	46	407	60	110	47
MIN	2.2	5.7	5.6	14	34	37	22	15	19	13	9.6	5.4
CFSM	.18	.12	.29	.97	1.75	1.41	.60	.46	1.26	.36	.51	.20
IN.	.21	.13	.34	1.12	1.83	1.63	.66	.53	1.40	.42	.59	.22

CAL YR 1981 TOTAL 5448.95 MEAN 14.9 MAX 247 MIN .90 CFSM .26 IN 3.57
WTR YR 1982 TOTAL 13863.10 MEAN 38.0 MAX 489 MIN 2.2 CFSM .67 IN 9.08

02056900 BLACKWATER RIVER NEAR ROCKY MOUNT, VA

LOCATION.--Lat 37°02'42", long 79°50'40", Franklin County, Hydrologic Unit 03010101, on right bank 45 ft (14 m) downstream from bridge on State Highway 122, 3.0 mi (4.8 km) northeast of Rocky Mount, and 4.1 mi (6.6 km) upstream from Maggodee Creek.

DRAINAGE AREA.--115 mi^2 (298 km^2).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.45 ft (267.142 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--6 years, 135 ft^3/s (3.823 m^3/s), 15.94 in/yr (405 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,130 ft^3/s (230 m^3/s) Sept. 22, 1979, gage height, 16.38 ft (4.993 m); minimum, 7.2 ft^3/s (0.20 m^3/s) Aug. 28, 1981, gage height, 1.16 ft (0.354 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 26	2300	1540	43.6	5.98	1.823	June 13	0700	*3060	86.7	8.68	2.646
June 5	0730	2180	61.7	7.15	2.179						

Minimum discharge, 12 ft^3/s (0.34 m^3/s) Oct. 1, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	38	30	114	130	114	108	105	233	93	130	46
2	13	36	37	136	117	128	98	98	166	86	67	45
3	13	34	38	480	586	204	100	93	135	83	57	43
4	13	33	35	556	538	186	99	86	176	87	52	36
5	14	32	34	264	254	162	88	82	922	88	50	34
6	14	31	33	162	196	188	93	78	272	87	74	33
7	14	29	31	125	154	300	87	74	192	82	66	33
8	13	28	30	104	135	320	86	72	162	77	82	33
9	13	27	29	90	131	229	96	69	148	83	318	33
10	13	27	27	52	150	194	98	66	200	98	111	33
11	14	27	28	45	123	172	90	62	438	146	106	33
12	17	27	32	42	114	158	86	60	202	233	108	32
13	19	27	35	40	111	147	82	57	1450	143	77	30
14	19	26	39	38	106	136	80	55	524	425	67	29
15	19	26	60	37	102	133	80	52	314	117	62	33
16	19	26	116	36	108	140	78	51	242	99	58	32
17	19	27	70	36	217	133	79	50	214	83	69	30
18	19	26	55	43	348	123	93	48	192	74	346	30
19	19	26	47	55	233	122	79	52	172	74	94	30
20	19	26	45	60	196	518	74	74	152	68	72	30
21	18	26	51	100	170	262	74	128	136	62	62	33
22	19	25	60	115	148	212	70	90	128	58	55	61
23	22	25	74	105	133	176	68	84	128	57	51	55
24	27	30	67	90	123	156	66	96	116	116	50	37
25	30	36	63	80	114	142	66	439	111	75	49	35
26	36	34	63	70	106	174	160	277	123	63	46	50
27	408	31	57	58	100	136	162	430	130	57	44	102
28	130	30	55	62	105	123	162	422	119	55	44	56
29	66	30	51	66	---	117	131	307	105	52	42	44
30	50	28	46	70	---	111	116	317	102	51	39	41
31	43	---	48	90	---	108	---	210	---	162	41	---
TOTAL	1164	874	1486	3421	5048	5524	2849	4184	7704	3134	2589	1192
MEAN	37.5	29.1	47.9	110	180	178	95.0	135	257	101	83.5	39.7
MAX	408	38	116	556	586	518	162	439	1450	425	346	102
MIN	12	25	27	36	100	108	66	48	102	51	39	29
CFSM	.33	.25	.42	.96	1.57	1.55	.83	1.17	2.24	.88	.73	.35
IN.	.38	.28	.48	1.11	1.63	1.79	.92	1.35	2.49	1.01	.84	.39

CAL YR 1981 TOTAL 15747.4 MEAN 43.1 MAX 408 MIN 7.4 CFSM .38 IN 5.09
WTR YR 1982 TOTAL 39169.0 MEAN 107 MAX 1450 MIN 12 CFSM .93 IN 12.67

02057400 SMITH MOUNTAIN LAKE NEAR PENHOOK, VA

LOCATION.--Lat 37°02'28", long 79°32'09", Pittsylvania County, Hydrologic Unit 03010101, at dam on Roanoke (Staunton) River 6.5 mi (10.5 km) northeast of Penhook and at mile 314.0 (505.2 km).

DRAINAGE AREA.--1,024 mi^2 (2,652 km^2).

PERIOD OF RECORD.--September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 19, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Two ungated spillways, one near each end of dam, with crests at elevation 795 ft (242.3 m) are each 105 ft (32.0 m) long. Initial filling began in September 1963 during construction; water in reservoir first reached minimum power pool, elevation, 787 ft (239.9 m), in May 1965. Total capacity at maximum pool elevation, 811 ft (247.2 m), is 1,517,000 acre-ft (1.87 km^3) of which 375,000 acre-ft (462 hm^3) is above the spillway crest; 157,800 acre-ft (195 hm^3) is normally used for power between elevation 787 ft (239.9 m), minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 601 ft (183.2 m), is 100 acre-ft (123,000 m^3). Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (pumped storage) which is used for hydroelectric power, flood control, low-water regulation for pollution abatement and water supply, water releases for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,250,200 acre-ft (1.54 km^3) Apr. 27, 1978, elevation, 799.8 ft (243.78 m); minimum (after first filling to minimum power pool), 995,400 acre-ft (1.23 km^3) Jan. 23, 1970, elevation, 787.6 ft (240.06 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,142,000 acre-ft (1.41 km^3) many days during year, elevation, 795.0 ft (242.32 m); minimum, 1,050,200 acre-ft (1.29 km^3) Oct. 23, 24, elevation, 790.5 ft (240.94 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	792.7	1095100	
Oct. 31	792.2	1084900	-10200
Nov. 30	792.2	1084900	0
Dec. 31	793.8	1117500	+32600
CAL YR 1981			+67300
Jan. 31	794.8	1137900	+20400
Feb. 28	794.9	1140000	+2100
Mar. 31	794.9	1140000	0
Apr. 30	794.5	1131800	-8200
May 31	794.6	1133800	+2000
June 30	793.8	1117500	-16300
July 31	794.2	1125700	+8200
Aug. 31	793.5	1111400	-14300
Sept. 30	793.5	1111400	0
WTR YR 1982			+16300

02058400 PIGG RIVER NEAR SANDY LEVEL, VA

LOCATION.--Lat 36°56'45", long 79°31'30", Pittsylvania County, Hydrologic Unit 03010101, on left bank 300 ft (90 m) downstream from Harpen Creek, 0.5 mi (0.8 km) upstream from bridge on State Highway 40, and 1.1 mi (1.8 km) south of Sandy Level.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--May 1963 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 617.00 ft (188.062 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 18, 1963, nonrecording gage at same site and datum.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 363 ft^3/s (10.28 m^3/s), 14.08 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft^3/s (719 m^3/s) Apr. 27, 1978, gage height, 25.56 ft (7.791 m), from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement of peak flow; minimum, 24 ft^3/s (0.68 m^3/s) Aug. 29, 30, 1981, gage height, 1.95 ft (0.594 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,920 ft^3/s (139 m^3/s) at 1530 hours June 13, gage height, 9.54 ft (2.908 m), no other peak above base of 4,000 ft^3/s (110 m^3/s); minimum, 48 ft^3/s (1.36 m^3/s) Oct. 8, 9, 10; minimum gage height, 2.12 ft (0.646 m) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	121	101	599	569	314	221	241	935	168	291	97
2	62	115	128	633	434	368	211	224	495	152	181	106
3	60	111	143	1330	1260	854	226	213	307	144	128	100
4	59	106	129	2760	1740	656	265	200	392	150	111	88
5	58	106	126	1390	641	492	223	186	1110	180	104	82
6	57	113	116	545	427	554	222	180	858	170	168	78
7	54	117	113	380	335	1060	213	174	397	155	131	78
8	52	100	108	307	285	1410	202	172	296	143	108	76
9	51	93	103	261	269	634	230	172	322	146	197	76
10	51	95	97	191	281	453	241	162	463	158	284	78
11	54	97	91	140	253	375	221	153	967	189	185	78
12	55	95	94	201	228	337	209	148	396	218	161	78
13	59	96	86	208	232	308	203	143	3020	184	141	75
14	57	93	123	202	235	284	199	141	1870	458	124	73
15	57	94	320	199	220	275	201	137	640	242	115	78
16	57	93	776	203	234	291	202	168	425	169	114	82
17	53	96	373	177	451	281	205	147	364	149	114	75
18	52	94	241	172	1090	259	221	137	431	136	203	64
19	57	94	180	179	578	247	211	143	323	134	227	59
20	56	94	130	196	436	742	198	251	275	138	138	64
21	58	95	161	276	360	549	198	251	245	124	116	76
22	62	93	196	425	306	414	192	190	224	118	105	93
23	68	93	235	332	270	336	182	248	222	113	99	129
24	78	105	224	298	252	295	176	994	207	170	99	98
25	89	129	233	261	234	274	174	398	191	149	117	79
26	112	126	303	236	215	293	284	436	186	125	115	115
27	655	112	268	175	237	271	589	370	204	113	99	383
28	649	111	234	200	279	242	432	669	200	107	95	199
29	227	103	210	208	---	230	339	678	191	103	91	125
30	156	96	188	206	---	225	276	786	180	106	87	105
31	132	---	178	246	---	223	---	478	---	120	88	---
TOTAL	3401	3086	6008	13136	12351	13546	7166	8990	16336	4931	4336	2987
MEAN	110	103	194	424	441	437	239	290	545	159	140	99.6
MAX	655	129	776	2760	1740	1410	589	994	3020	458	291	383
MIN	51	93	86	140	215	223	174	137	180	103	87	59
CFSM	.31	.29	.55	1.21	1.26	1.25	.68	.83	1.56	.45	.40	.29
IN.	.36	.33	.64	1.40	1.31	1.44	.76	.96	1.74	.52	.46	.32

CAL YR 1981 TOTAL 53988 MEAN 148 MAX 776 MIN 25 CFSM .42 IN 5.74
WTR YR 1982 TOTAL 96274 MEAN 264 MAX 3020 MIN 51 CFSM .75 IN 10.23

02059400 LEESVILLE LAKE NEAR LEESVILLE, VA

LOCATION.--Lat 37°05'35", long 79°24'09", Campbell County, Hydrologic Unit 03010101, at Leesville Dam on Roanoke (Staunton) River, 2.0 mi (3.2 km) south of Leesville, 3.5 mi (5.6 km) upstream from Goose Creek, and at mile 296 (476 km).

DRAINAGE AREA.--1,505 mi^2 (3,898 km^2).

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 6, 1963, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 578.0 ft (176.17 m), is equipped with 4 radial gates 35 ft (11 m) high by 50 ft (15 m) wide. Storage began on Sept. 29, 1962, during construction, and water in reservoir first reached minimum power pool, elevation, 600.0 ft (182.88 m), on Mar. 5, 1963. Total capacity at maximum pool elevation, 613 ft (186.8 m), is 94,960 acre-ft (117 hm^3) of which 75,960 acre-ft (93.7 hm^3) is above the spillway crest; 38,200 acre-ft (47.1 hm^3) is normally used for power between elevations 600.0 ft (182.88 m), minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 579.75 ft (176.708 m), is 21,010 acre-ft (25.9 hm^3). Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (see station 02057400).

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,180 acre-ft (121 hm^3) Feb. 1, 1965, elevation, 614.0 ft (187.15 m); minimum (after first filling to minimum power pool), 39,880 acre-ft (49.2 hm^3) Mar. 19, 1963, elevation, 592.0 ft (180.44 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 95,600 acre-ft (118 hm^3) Dec. 9, 10, elevation, 613.2 ft (186.90 m); minimum, 57,200 acre-ft (70.5 hm^3) many days during year, elevation, 600.0 ft (182.88 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	601.0	59880	
Oct. 31	605.0	70600	+10720
Nov. 30	603.7	67120	-3480
Dec. 31	601.2	60420	-6700
CAL YR 1981			+2680
Jan. 31	603.5	66580	+6160
Feb. 28	604.0	67920	+1340
Mar. 31	604.5	69260	+1340
Apr. 30	608.7	81480	+12220
May 31	608.4	80600	-880
June 30	608.3	80300	-300
July 31	604.9	70330	-9970
Aug. 31	607.3	77360	+7030
Sept. 30	602.1	62830	-14530
WTR YR 1982			+2950

02059500 GOOSE CREEK NEAR HUDDLESTON, VA

LOCATION.--Lat 37°10'23", long 79°31'14", Bedford County, Hydrologic Unit 03010101, on left bank 0.3 mi (0.5 km) upstream from Haden Bridge on State Highway 732, 0.4 mi (0.6 km) upstream from Rockcastle Creek, and 3.5 mi (5.6 km) northwest of Huddleston.

DRAINAGE AREA.--188 mi² (487 km²).

PERIOD OF RECORD.--March 1925 to August 1928 (gage heights only), September 1930 to current year.

REVISED RECORDS.--WSP 892: 1933, 1935(M), 1939. WSP 972: 1931-32(M), 1934(M), 1935-38, 1940, 1941(M). WSP 1082: 1940(P). WSP 1142: 1938-40(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 592.91 ft (180.719 m) National Geodetic Vertical Datum of 1929. Mar. 15, 1925, to Aug. 4, 1928, nonrecording gage at site 1,300 ft (396 m) downstream at different datum.

REMARKS.--Records good except those for periods of no gage-height record, Nov. 9 to Dec. 11 and Apr. 19 to May 24, which are fair. Prior to October 1954, diurnal fluctuation at low flow caused by mill above station. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--52 years, 175 ft³/s (4.956 m³/s), 12.64 in/yr (321 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s (575 m³/s) Oct. 19, 1937, gage height, 25.75 ft (7.849 m), from floodmarks, from rating curve extended above 11,000 ft³/s (310 m³/s) on basis of slope-area measurements at gage heights 19.25 ft (5.867 m), 24.1 ft (7.35 m), and 24.89 ft (7.586 m); minimum, 3 ft³/s (0.085 m³/s) Aug. 31, 1932, Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 13	1500	*4250	120	11.22	3.420	Aug. 8	2030	2920	83.0	8.57	2.612

Minimum discharge, 24 ft³/s (0.68 m³/s) Oct. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	48	48	186	400	146	121	130	132	66	60	44
2	28	46	55	156	214	172	112	120	107	60	50	54
3	29	45	64	877	854	346	118	110	82	57	45	51
4	27	42	56	1230	953	316	118	105	90	76	43	41
5	26	42	52	509	472	271	104	100	294	126	41	39
6	26	62	50	270	325	271	112	95	187	78	221	39
7	25	42	47	178	232	602	99	90	129	64	115	38
8	24	39	45	131	178	672	99	88	99	58	857	37
9	24	41	42	106	190	412	115	84	104	60	810	38
10	26	43	40	79	190	301	112	82	275	58	259	39
11	28	44	42	69	149	244	104	80	220	66	152	39
12	29	43	45	64	132	217	97	79	143	132	118	37
13	30	40	48	60	132	193	97	76	1540	85	97	35
14	29	39	60	58	124	169	97	74	796	92	87	35
15	29	39	123	57	115	172	94	72	400	74	78	37
16	30	39	195	56	129	196	94	70	280	64	72	35
17	30	40	113	56	394	199	99	69	229	57	68	33
18	29	39	88	59	685	184	126	69	196	61	68	32
19	29	39	68	75	430	169	115	76	160	100	66	32
20	29	38	54	110	355	178	100	92	135	74	57	33
21	29	38	64	140	277	178	96	130	112	60	52	37
22	30	37	70	200	217	163	92	90	104	52	48	58
23	35	37	84	150	181	152	89	70	97	54	46	52
24	45	44	95	120	163	146	88	71	85	232	46	39
25	39	56	92	105	146	140	88	68	80	87	45	39
26	50	50	97	92	132	160	155	70	85	64	43	66
27	385	46	84	85	126	140	220	118	82	56	41	190
28	170	45	75	92	140	132	210	107	72	51	43	74
29	81	45	68	100	---	126	170	104	70	48	41	54
30	59	43	65	120	---	124	150	121	70	50	39	46
31	50	---	68	150	---	124	---	132	---	64	40	---
TOTAL	1525	1291	2197	5740	8035	7015	3491	2842	6455	2326	3848	1423
MEAN	49.2	43.0	70.9	185	287	226	116	91.7	215	75.0	124	47.4
MAX	385	62	195	1230	953	672	220	132	1540	232	857	190
MIN	24	37	40	56	115	124	88	68	70	48	39	32
CFSM	.26	.23	.38	.98	1.53	1.20	.62	.49	1.14	.40	.66	.25
IN.	.30	.26	.43	1.14	1.59	1.39	.69	.56	1.28	.46	.76	.28

CAL YR 1981 TOTAL 23447 MEAN 64.2 MAX 693 MIN 23 CFSM .34 IN 4.64
WTR YR 1982 TOTAL 46188 MEAN 127 MAX 1540 MIN 24 CFSM .68 IN 9.14

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA

LOCATION.--Lat 37°06'16", long 79°17'44", Pittsylvania County, Hydrologic Unit 03010101, on right bank 12 ft (4 m) upstream from bridge on alternate U.S. Highway 29, 0.3 mi (0.5 km) south of Altavista, 0.3 mi (0.5 km) downstream from Sycamore Creek, 3.5 mi (5.6 km) upstream from Big Otter River, and at mile 286.5 (461.0 km).

DRAINAGE AREA.--1,789 mi^2 (4,634 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1930 to current year.

REVISED RECORDS.--WSP 892: 1938(M). WSP 972: 1931-33. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.10 ft (153.345 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1951, on left bank 50 ft (15 m) downstream at same datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 9.5 mi (15.3 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 27.5 mi (44.2 km) upstream. Gage-height and Corps of Engineers satellite telemeters at station. Appalachian Power Company gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 1,786 ft^3/s (50.58 m^3/s), 13.56 in/yr (344 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft^3/s (2,970 m^3/s) Aug. 15, 1940, gage height, 40.08 ft (12.216 m), from floodmark, from rating curve extended above 52,000 ft^3/s (1,500 m^3/s) on basis of unit hydrograph and flood-routing studies by Corps of Engineers and records for other stations in Roanoke River basin; minimum, 13 ft^3/s (0.37 m^3/s) Jan. 30, 1966; minimum daily, 39 ft^3/s (1.10 m^3/s) July 10, 1966; minimum gage height, 1.53 ft (0.466 m) Jan. 2, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,100 ft^3/s (428 m^3/s) June 13, gage height, 16.02 ft (4.883 m); minimum, 68 ft^3/s (1.93 m^3/s) Jan. 10, gage height, 1.59 ft (0.485 m), result of freezeup; minimum daily, 221 ft^3/s (6.26 m^3/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	453	433	407	692	3180	2840	1810	1380	2820	1190	310	835
2	467	391	438	680	3130	1960	2770	1250	3020	965	959	840
3	464	429	413	1720	7370	3170	419	1310	4190	239	945	809
4	460	378	381	3800	12100	3430	242	1290	3350	256	988	323
5	404	386	341	10000	7180	3520	1830	1250	1410	390	899	252
6	410	371	342	4080	2450	3340	1500	1220	496	1040	717	284
7	407	446	345	2340	838	2680	846	1210	2860	792	286	1070
8	417	381	332	2990	3160	8990	824	1230	3810	837	739	994
9	405	371	355	870	3130	4220	1060	1230	3420	1950	2310	847
10	402	398	322	360	2050	3240	221	1260	3860	353	2560	908
11	409	384	334	240	713	3080	240	1260	3890	248	1680	422
12	405	376	365	266	376	2720	1010	1240	3370	899	1110	296
13	410	385	380	1400	289	424	1240	1200	7780	2190	822	806
14	398	374	354	1300	287	280	1040	1240	12200	2250	709	984
15	423	373	474	1160	855	5090	1390	1290	6980	1250	345	982
16	409	404	612	346	5620	3770	699	1310	5650	1050	1010	837
17	410	434	367	648	3860	1580	637	1280	1960	250	1050	733
18	414	340	440	1120	4490	787	637	1220	1560	222	894	285
19	359	470	406	765	4620	1530	876	1230	266	1020	840	272
20	350	358	445	754	2560	486	1230	1240	239	1000	836	1040
21	395	396	427	1020	1510	2380	1210	1230	2200	869	278	922
22	379	400	453	4040	3440	4410	1160	1250	1320	608	276	926
23	411	387	408	823	2310	1220	1210	1260	1240	1250	1020	892
24	340	412	354	252	1770	1090	1270	1270	1060	457	992	362
25	392	422	375	1890	1850	1310	1280	1180	1010	356	807	365
26	383	416	415	1960	1840	1560	1340	1210	259	1030	827	405
27	780	393	367	942	423	888	1370	1480	257	1070	729	541
28	825	393	343	297	301	249	1230	1250	1190	1060	261	834
29	519	393	304	338	---	2560	1140	1310	2450	1060	303	858
30	455	391	287	364	---	1440	1110	1300	2590	463	1000	1170
31	389	---	292	420	---	1450	---	1390	---	288	1010	---
TOTAL	13544	11885	11878	47877	81702	75694	32841	39270	86707	26902	27512	21094
MEAN	437	396	383	1544	2918	2442	1095	1267	2890	868	887	703
MAX	825	470	612	10000	12100	8990	2770	1480	12200	2250	2560	1170
MIN	340	340	287	240	287	249	221	1180	239	222	261	252
(*)	+8	-58	+421	+432	+62	+22	+67	+19	-279	-29	-119	-244
MEAN‡	445	338	804	1976	2980	2464	1162	1286	2611	839	768	459
CFSM‡	.25	.19	.45	1.10	1.67	1.38	.65	.72	1.46	.47	.43	.26
IN‡	.29	.21	.52	1.27	1.74	1.59	.72	.83	1.63	.54	.50	.29

CAL YR 1981 TOTAL 197734 MEAN 542 MAX 1560 MIN 128 MEAN‡ 639 CFSM‡ .36 IN‡ 4.85
WTR YR 1982 TOTAL 476906 MEAN 1307 MAX 12200 MIN 221 MEAN‡ 1334 CFSM‡ .75 IN‡ 10.12

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

‡ Adjusted for change in contents.

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.
WATER TEMPERATURES: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.
SUSPENDED-SEDIMENT DISCHARGE: February 1953 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 580 micromhos Jan. 17, 1969; minimum daily, 54 micromhos Aug. 18, 1955.
WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 10, 1951, Aug. 11, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 210 micromhos Jan. 6; minimum daily, 86 micromhos Feb. 18.
WATER TEMPERATURES: Maximum daily, 27.0°C July 19; minimum daily, 0.5°C Jan. 12, 13, 25, 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
OCT 22...	1115	369	184	7.9	15.0	4	68	16	6.8	11	1.9
DEC 08...	1225	313	160	8.1	8.5	4	61	15	5.8	5.4	2.2
JAN 29...	1140	313	151	7.6	2.5	43	42	10	4.1	11	2.0
MAR 23...	1425	3030	148	7.8	9.0	4	56	13	5.6	5.7	2.0
MAY 11...	1030	1160	171	7.8	14.0	3	60	14	6.2	8.2	2.1
JUN 18...	1130	338	137	7.6	20.5	18	43	10	4.3	9.7	2.1
JUL 28...	1130	268	184	7.7	23.0	15	62	15	6.0	11	2.1
SEP 15...	1050	206	180	7.4	21.5	7	69	17	6.4	6.3	2.2

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT 22...	59	11	9.1	.2	5.3	96	97	.010	.16	<.010	17
DEC 08...	53	13	6.6	.1	4.5	102	85	<.010	.11	<.010	33
JAN 29...	43	12	9.3	<.1	8.7	107	83	.020	.37	<.010	72
MAR 23...	51	11	6.9	.1	5.5	82	81	<.010	.26	<.010	42
MAY 11...	57	13	8.5	.1	5.1	86	91	<.010	.21	.020	<3
JUN 18...	41	11	7.7	.1	13	91	83	<.010	.32	.080	130
JUL 28...	58	13	11	.2	7.4	111	101	.010	.27	.130	29
SEP 15...	60	10	7.8	.2	5.8	104	92	<.010	.16	<.010	11

< Actual value is known to be less than the value shown.

02060500 ROANOKE RIVER AT ALTAVISTA, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	---	178	178	165	144	149	141	159	153	153	182
2	170	---	170	165	138	154	142	144	160	134	153	176
3	165	---	168	170	165	139	123	144	162	136	176	186
4	145	---	170	125	180	115	128	149	162	111	182	189
5	165	---	160	190	203	125	141	148	---	111	163	157
6	167	---	160	210	203	125	141	146	---	137	185	157
7	160	---	130	195	200	94	123	148	159	120	141	173
8	170	---	153	180	160	138	141	148	158	129	187	172
9	160	---	150	190	175	139	139	149	156	143	---	189
10	160	---	160	---	180	108	108	147	156	132	163	---
11	180	---	160	---	165	140	---	147	143	133	177	---
12	170	---	180	190	124	137	108	147	126	132	156	---
13	165	---	160	200	126	137	141	151	139	141	158	---
14	157	---	160	195	139	---	144	151	140	137	151	---
15	160	158	---	200	138	109	144	154	148	157	161	---
16	150	---	---	---	141	136	154	---	143	166	165	---
17	150	---	150	---	134	136	158	155	136	169	157	---
18	165	175	143	158	86	137	124	155	135	137	157	---
19	170	163	135	170	139	117	122	155	135	132	175	---
20	173	170	160	200	140	133	142	154	115	134	178	---
21	---	160	160	160	115	136	140	157	115	170	179	---
22	---	150	110	150	115	137	144	156	136	163	163	---
23	---	165	145	180	141	139	144	148	125	170	173	---
24	---	175	130	140	134	143	145	147	149	170	176	---
25	---	130	130	160	144	139	142	160	133	147	---	---
26	---	155	---	160	146	140	141	161	132	138	---	---
27	---	160	143	178	146	117	126	146	137	137	---	---
28	---	155	135	190	142	116	140	147	135	170	---	---
29	---	175	150	170	---	116	141	147	134	167	---	---
30	---	140	145	170	---	143	141	148	135	165	171	---
31	---	---	150	180	---	143	---	159	---	166	182	---
MEAN	164	159	152	176	149	131	137	150	142	145	167	176

WTR YR 1982 MEAN 152 MAX 210 MIN 86

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	---	8.0	3.0	3.0	5.5	10.5	14.5	18.0	23.0	22.5	23.5
2	18.5	---	9.5	3.5	1.0	4.5	11.0	14.0	19.0	19.5	23.5	21.5
3	19.5	---	9.0	4.0	3.0	5.0	14.0	13.0	18.0	20.0	20.5	24.5
4	20.0	---	8.0	4.0	3.5	4.5	13.0	12.5	18.0	21.5	20.0	22.5
5	21.0	---	8.5	5.0	3.5	5.0	10.0	12.5	---	22.0	23.5	21.5
6	20.0	---	8.0	4.5	4.0	6.5	10.0	13.5	---	20.0	21.5	23.5
7	20.5	---	7.0	5.0	3.0	6.0	6.0	14.5	17.0	24.5	26.0	20.5
8	20.0	---	7.0	4.0	3.0	6.5	9.0	15.5	17.0	25.0	22.5	21.5
9	21.5	---	6.5	3.0	4.0	6.0	10.0	14.0	18.0	22.0	21.5	20.0
10	20.0	---	6.0	---	3.0	6.0	12.0	13.0	19.0	24.5	22.0	---
11	18.5	---	7.0	---	3.0	6.5	---	13.0	18.0	24.0	21.5	---
12	19.5	---	6.5	.5	4.0	7.0	11.0	14.0	19.0	25.0	21.0	---
13	19.0	---	6.0	.5	3.5	7.0	11.5	17.5	18.0	19.5	20.0	---
14	19.0	---	5.0	2.5	4.0	---	12.0	15.0	17.0	20.0	21.5	---
15	20.0	6.0	---	1.5	5.5	9.0	11.5	16.0	18.0	21.0	23.0	---
16	19.0	---	3.0	---	6.0	6.5	11.5	---	18.5	22.5	23.5	---
17	15.5	---	3.0	---	6.0	8.5	12.5	16.0	19.5	24.0	21.0	---
18	14.0	11.0	3.0	2.5	5.5	9.5	12.5	15.5	18.0	26.0	21.5	---
19	19.0	11.0	3.0	1.5	5.0	10.0	13.0	17.0	17.5	27.0	22.0	---
20	16.0	9.0	3.0	1.5	5.0	9.0	12.0	16.0	20.0	24.0	20.5	---
21	---	8.5	3.0	3.0	5.0	8.5	11.5	15.5	23.0	21.0	20.0	---
22	---	8.5	4.0	1.0	5.0	7.5	10.5	14.5	18.5	22.0	22.5	---
23	---	7.0	4.5	2.5	6.0	7.5	10.0	15.0	21.5	22.5	22.0	---
24	---	8.0	5.0	1.0	6.0	9.0	12.0	15.0	18.0	22.0	23.5	---
25	---	7.5	---	.5	6.0	10.0	13.5	14.5	20.0	24.0	---	---
26	---	8.0	---	.5	4.5	9.0	13.0	16.0	19.0	26.5	---	---
27	---	9.0	4.0	2.5	4.0	8.0	14.0	15.5	20.0	24.5	---	---
28	---	9.5	4.5	2.0	4.5	7.0	15.0	16.0	19.5	23.0	---	---
29	---	8.5	4.5	2.5	---	6.5	14.0	17.5	20.0	21.0	---	---
30	---	7.5	3.0	3.0	---	7.5	15.0	17.0	20.0	23.5	19.5	---
31	---	---	2.0	3.0	---	10.0	---	17.5	---	21.5	21.5	---
MEAN	19.0	8.5	5.5	2.5	4.5	7.5	12.0	15.0	19.0	23.0	22.0	22.0

WTR YR 1982 MEAN 13.0 MAX 27.0 MIN .5

02061500 BIG OTTER RIVER NEAR EVINGTON, VA

LOCATION.--Lat 37°12'30", long 79°18'14", Campbell County, Hydrologic Unit 03010101, on right bank 60 ft (18 m) upstream from bridge on State Highway 682, 2.0 mi (3.2 km) southwest of Evington, and 2.1 mi (3.4 km) upstream from Flat Creek.

DRAINAGE AREA.--320 mi^2 (829 km^2).

PERIOD OF RECORD.--October 1936 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1965, published as Otter River near Evington.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1938-39(M). WSP 972: 1937-39. WSP 1032: 1940. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 544.02 ft (165.817 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of doubtful gage-height record, Aug. 14 to Sept. 19, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 328 ft^3/s (9.289 m^3/s), 13.92 in/yr (354 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft^3/s (779 m^3/s) Oct. 19, 1937, Aug. 19, 1939, gage height, 23.1 ft (7.04 m), from rating curve extended above 7,000 ft^3/s (200 m^3/s) on basis of unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum, 7.5 ft^3/s (0.21 m^3/s) Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,130 ft^3/s (259 m^3/s) at 2030 hours June 13, gage height, 17.53 ft (5.343 m), no other peak above base of 4,000 ft^3/s (110 m^3/s); minimum, 41 ft^3/s (1.16 m^3/s) Oct. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	141	94	554	600	300	262	252	452	211	136	85
2	51	130	120	401	533	347	249	244	389	191	136	92
3	55	122	120	1430	1810	600	257	241	308	186	130	90
4	51	116	110	2110	1590	551	267	219	407	216	124	80
5	45	110	108	1060	785	473	236	206	1500	455	120	74
6	46	120	102	572	557	521	249	196	729	262	116	73
7	43	118	96	422	431	945	229	191	449	184	181	72
8	41	102	94	329	359	1210	226	186	350	159	159	70
9	41	96	92	281	368	707	252	181	563	201	512	77
10	42	96	92	224	398	545	254	179	1570	159	199	78
11	46	94	93	180	311	473	234	179	1700	272	167	76
12	49	92	97	150	281	437	226	179	824	257	278	70
13	50	90	105	135	275	395	226	179	3850	186	167	68
14	51	90	112	128	267	362	224	174	2770	224	155	68
15	50	88	308	120	252	371	216	169	1180	186	145	73
16	51	88	700	120	283	425	211	162	844	174	135	70
17	51	88	306	115	569	443	219	157	673	159	125	69
18	51	86	214	125	1000	386	283	155	669	167	120	75
19	51	84	181	140	655	356	239	157	521	289	110	90
20	53	84	141	199	585	389	224	148	434	169	100	106
21	51	86	155	335	476	404	226	174	380	157	90	118
22	54	82	172	482	398	374	214	145	350	155	82	145
23	55	80	219	306	344	341	206	136	344	155	74	164
24	60	86	264	250	314	317	204	145	300	389	77	134
25	64	126	229	220	289	306	204	145	275	209	74	126
26	80	114	262	200	264	362	409	283	264	157	72	176
27	1020	106	224	167	270	314	539	1920	252	159	78	338
28	625	104	196	180	280	283	392	897	236	155	80	139
29	236	98	176	200	---	275	303	942	229	148	80	100
30	174	92	159	220	---	270	270	680	216	141	78	92
31	157	---	181	250	---	267	---	491	---	139	76	---
TOTAL	3545	3009	5522	11605	14544	13749	7750	9712	23028	6271	4176	3088
MEAN	114	100	178	374	519	444	258	313	768	202	135	103
MAX	1020	141	700	2110	1810	1210	539	1920	3850	455	512	338
MIN	41	80	92	115	252	267	204	136	216	139	72	68
CFSM	.36	.31	.56	1.17	1.62	1.39	.81	.98	2.40	.63	.42	.32
IN.	.41	.35	.64	1.35	1.69	1.60	.90	1.13	2.68	.73	.49	.36

CAL YR 1981 TOTAL 53297 MEAN 146 MAX 1720 MIN 35 CFSM .46 IN 6.20
WTR YR 1982 TOTAL 105999 MEAN 290 MAX 3850 MIN 41 CFSM .91 IN 12.32

02062500 ROANOKE (STAUNTON) RIVER AT BROOKNEAL, VA

LOCATION.--Lat 37°02'28", long 78°57'02", Campbell County, Hydrologic Unit 03010102, on left bank 1,600 ft (490 m) upstream from bridge on U.S. Highway 501 at Brookneal, 2.9 mi (4.7 km) upstream from Falling River, and at mile 255.9 (411.7 km).

DRAINAGE AREA.--2,415 mi² (6,255 km²).

PERIOD OF RECORD.--April 1923 to current year.

REVISED RECORDS.--WSP 892: 1928(M). WSP 972: 1928-34. WSP 1303: 1924-27(M), 1929(M), 1941(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 351.96 ft (107.277 m) National Geodetic Vertical Datum of 1929. Apr. 30, 1923, to Aug. 29, 1929, nonrecording gage, Aug. 30, 1929, to Aug. 15, 1940, water-stage recorder, and Aug. 16 to Oct. 1, 1940, nonrecording gage at site 1,800 ft (550 m) downstream at same datum. Oct. 2, 1940, to Sept. 30, 1941, nonrecording gage at site 1,600 ft (490 m) downstream at same datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 40.1 mi (64.5 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 58.1 mi (93.5 km) upstream. Gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 2,379 ft³/s (67.37 m³/s), 13.38 in/yr (340 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) Aug. 15, 1940, gage height, 46.5 ft (14.17 m), at present site, from gage-height relation curve, from rating curve extended above 55,000 ft³/s (1,600 m³/s) on basis of slope-area measurement by Geological Survey, unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum daily, 140 ft³/s (3.96 m³/s) July 25, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,800 ft³/s (674 m³/s) June 14, gage height, 23.50 ft (7.163 m); minimum, 228 ft³/s (6.46 m³/s) Jan. 11, gage height, 5.49 ft (1.673 m), result of freezeup; minimum daily, 356 ft³/s (10.1 m³/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	522	606	541	1320	2570	1320	1840	1430	2970	2800	547	1140
2	538	631	582	1750	4650	3600	2460	1740	3030	1410	526	963
3	534	592	632	2900	11100	3550	2940	1570	4520	1290	1190	972
4	535	594	594	8820	18900	4830	679	1630	4310	557	1130	931
5	532	549	544	12000	9950	4470	898	1510	5710	932	1200	428
6	476	556	508	7080	6970	4980	2220	1450	2610	1200	1080	356
7	476	566	503	4340	2410	4120	1700	1420	1540	1490	1350	373
8	469	600	497	2770	1750	11000	1180	1390	4270	1150	676	1170
9	473	522	478	3190	3630	7680	1320	1400	5070	1190	2020	1100
10	467	518	496	1060	3830	4420	1310	1410	4840	2380	2290	934
11	470	541	465	457	2360	4080	612	1410	8910	594	3080	1100
12	479	522	468	430	998	3780	682	1370	5080	1110	1840	419
13	481	517	495	500	825	3030	1410	1340	8290	1420	1580	385
14	479	520	520	1600	814	938	1560	1300	21000	2920	1100	881
15	473	508	951	1500	805	1940	1410	1360	9520	2670	963	1080
16	497	517	2150	1400	2700	6060	1570	1400	7960	1620	491	1070
17	481	542	1400	644	6290	3840	1020	1420	4900	1400	1240	907
18	486	559	899	1370	5930	1800	994	1340	3190	537	1490	795
19	489	529	788	1350	5990	1240	1050	1370	2300	493	1180	362
20	435	548	669	1140	4830	2310	1400	1410	954	1460	1080	378
21	433	494	639	1360	2920	1080	1610	1360	898	1320	1030	1150
22	473	527	731	2190	2860	4670	1490	1410	2720	1150	436	1010
23	476	520	792	4780	4170	3720	1420	1400	1760	864	428	1020
24	520	550	818	911	2340	1540	1460	1500	1720	1780	1180	1000
25	482	604	1110	1170	2460	1530	1530	1360	1470	996	1170	448
26	685	611	1300	2440	2360	2140	1680	1280	1420	652	943	486
27	2590	594	979	2340	2320	2050	2140	2940	633	1340	983	799
28	3010	555	799	1120	846	1210	2060	2480	647	1340	822	784
29	1290	545	687	751	---	1570	1680	3120	1680	1330	393	997
30	847	543	615	807	---	2360	1500	2420	2930	1310	416	986
31	707	---	580	936	---	1990	---	2220	---	667	1130	---
TOTAL	21305	16580	23230	74426	117578	102848	44825	50160	126852	41372	34984	24424
MEAN	687	553	749	2401	4199	3318	1494	1618	4228	1335	1129	814
MAX	3010	631	2150	12000	18900	11000	2940	3120	21000	2920	3080	1170
MIN	433	494	465	430	805	938	612	1280	633	493	393	356
(*)	+8	-58	+421	+432	+62	+22	+67	+19	-279	-29	-119	-244
MEAN‡	695	495	1170	2833	4261	3340	1561	1637	3949	1306	1010	570
CFSM‡	.29	.20	.48	1.17	1.76	1.38	.65	.68	1.64	.54	.42	.24
IN‡	.33	.23	.56	1.35	1.84	1.59	.72	.78	1.82	.62	.48	.26

CAL YR 1981 TOTAL 283731 MEAN 777 MAX 5390 MIN 250 MEAN‡ 874 CFSM‡ .36 IN‡ 4.91
WTR YR 1982 TOTAL 678584 MEAN 1859 MAX 21000 MIN 356 MEAN‡ 1886 CFSM‡ .78 IN‡ 10.60

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

‡ Adjusted for change in contents.

02064000 FALLING RIVER NEAR NARUNA, VA

LOCATION.--Lat 37°07'36", long 78°57'36", Campbell County, Hydrologic Unit 03010102, on left bank at upstream side of bridge on State Highway 643, 2.7 mi (4.3 km) northeast of Naruna, and 3.2 mi (5.1 km) upstream from Little Falling River.

DRAINAGE AREA.--173 mi² (448 km²).

PERIOD OF RECORD.--July 1929 to January 1935, September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1930, 1931-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 412.32 ft (125.675 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at times during low flow, cause unknown. Prior to 1958, diurnal fluctuation caused by gristmill at Spring Mills. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years (water years 1930-34, 1942-82), 147 ft³/s (4.163 m³/s), 11.54 in/yr (293 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,600 ft³/s (923 m³/s) June 22, 1972, gage height, 29.21 ft (8.903 m), from rating curve extended above 6,100 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 3.0 ft³/s (0.085 m³/s) Oct. 9, 1932, gage height, 2.18 ft (0.664 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 26.5 ft (8.08 m), from floodmarks, discharge, 22,000 ft³/s (620 m³/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	1500	3650	103	12.05	3.673
Jan. 4	1500	2820	79.9	10.29	3.136
Feb. 3	1530	*4380	124	13.41	4.087
July 5	1115	2890	81.8	10.43	3.179

Minimum discharge, 21 ft³/s (0.59 m³/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	79	49	404	521	165	110	115	144	113	77	50
2	26	72	60	211	337	213	103	110	107	80	68	50
3	26	66	61	815	3030	323	121	112	92	77	63	47
4	25	63	62	1630	1190	290	134	100	140	111	59	44
5	26	61	59	587	478	253	109	93	489	1130	64	40
6	26	62	55	293	276	316	118	90	198	218	71	40
7	24	55	52	199	211	650	109	88	124	132	185	39
8	22	71	51	160	180	526	106	85	115	110	111	39
9	22	77	47	138	178	291	128	84	201	130	127	41
10	24	76	46	103	182	216	128	78	389	156	101	41
11	25	75	45	100	154	186	114	74	437	214	81	41
12	27	74	45	90	139	169	108	73	207	618	170	39
13	27	70	46	85	149	154	105	70	597	201	98	37
14	25	69	54	82	154	142	102	69	405	245	74	36
15	26	51	323	81	139	146	99	67	202	154	69	36
16	27	48	517	84	160	171	99	62	152	125	65	37
17	26	48	219	86	342	190	112	67	152	109	64	35
18	26	47	152	87	392	154	170	63	135	97	143	33
19	27	46	114	86	263	140	123	91	119	88	80	32
20	26	47	91	98	230	173	114	77	103	83	65	38
21	26	45	105	110	196	180	115	99	91	82	62	36
22	27	44	120	117	167	160	107	77	87	78	60	38
23	33	43	120	120	149	133	101	74	87	76	56	38
24	48	56	140	122	139	123	97	88	79	83	55	35
25	41	70	359	112	126	117	95	107	78	80	53	34
26	185	58	328	103	115	165	166	83	79	74	48	48
27	2030	54	184	97	130	137	232	111	83	70	47	96
28	586	52	137	94	160	118	207	133	95	69	58	55
29	181	49	114	90	---	112	147	258	77	69	53	44
30	114	47	113	100	---	110	125	366	83	65	48	41
31	90	---	121	150	---	111	---	167	---	75	48	---
TOTAL	3870	1775	3989	6634	9887	6434	3704	3231	5347	5012	2423	1260
MEAN	125	59.2	129	214	353	208	123	104	178	162	78.2	42.0
MAX	2030	79	517	1630	3030	650	232	366	597	1130	185	96
MIN	22	43	45	81	115	110	95	62	77	65	47	32
CFSM	.72	.34	.75	1.24	2.04	1.20	.71	.60	1.03	.94	.45	.24
IN.	.83	.38	.86	1.43	2.13	1.38	.80	.69	1.15	1.08	.52	.27

CAL YR 1981 TOTAL 30083 MEAN 82.4 MAX 2030 MIN 16 CFSM .48 IN 6.47
WTR YR 1982 TOTAL 53566 MEAN 147 MAX 3030 MIN 22 CFSM .85 IN 11.52

02065500 CUB CREEK AT PHENIX, VA

LOCATION.--Lat 37°04'45", long 78°45'50", Charlotte County, Hydrologic Unit 03010102, on right bank 10 ft (3 m) upstream from bridge on State Highway 40, 0.9 mi (1.4 km) west of Phenix, 1.9 mi (3.1 km) downstream from Rough Creek, and 6.4 mi (10.3 km) upstream from Louse Creek.

DRAINAGE AREA.--98.0 mi^2 (253.8 km^2).

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1333: 1947(M), 1948, 1949(M). WSP 2104: Drainage area. WDR VA-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 370.19 ft (112.834 m) National Geodetic Vertical Datum of 1929. Prior to July 14, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 96.5 ft^3/s (2.733 m^3/s), 13.37 in/yr (340 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,380 ft^3/s (209 m^3/s) June 22, 1972, gage height, 20.37 ft (6.209 m), from floodmark in gage house, from rating curve extended above 2,700 ft^3/s (76 m^3/s); minimum, 2.6 ft^3/s (0.074 m^3/s) Oct. 6, 1970, gage height, 0.74 ft (0.226 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 17.5 ft (5.33 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 28	0930	1840	52.1	9.24	2.816	Feb. 4	0500	*3430	97.1	11.72	3.572

Minimum discharge, 13 ft^3/s (0.37 m^3/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	57	32	172	96	117	78	63	199	46	39	28
2	16	51	40	154	237	135	69	60	114	39	34	28
3	17	46	42	185	652	199	75	64	82	37	32	28
4	17	43	42	452	2230	197	87	58	122	64	30	25
5	17	41	44	723	503	160	71	53	370	167	29	23
6	18	41	41	295	206	178	73	51	631	170	46	23
7	16	38	37	145	149	192	72	51	162	65	76	23
8	16	34	36	115	125	386	68	50	97	50	44	23
9	16	33	33	99	115	272	82	49	106	46	59	23
10	16	33	31	83	113	149	87	46	110	79	72	24
11	18	33	31	74	96	125	76	43	190	60	54	24
12	20	33	31	60	87	114	71	43	128	201	107	23
13	20	32	30	55	93	104	69	42	181	122	71	22
14	19	32	35	52	97	97	66	41	322	132	44	22
15	20	32	123	51	87	94	65	39	150	79	38	22
16	20	32	302	53	93	113	64	38	96	61	36	23
17	20	32	236	54	198	115	69	38	110	53	35	23
18	20	32	116	54	313	99	125	37	135	47	48	22
19	20	31	87	55	199	89	90	42	90	41	42	21
20	20	32	66	60	152	106	73	93	72	38	34	26
21	20	33	75	68	127	114	72	59	63	50	31	31
22	21	31	76	70	108	101	66	49	58	43	30	28
23	24	29	90	71	94	87	61	69	57	38	30	27
24	33	38	88	71	89	82	58	79	50	52	29	25
25	33	54	143	70	83	79	57	260	47	47	36	23
26	114	43	262	62	75	101	87	113	46	38	28	28
27	419	37	142	60	83	96	132	68	45	35	26	72
28	1270	35	95	58	110	79	104	71	47	33	33	40
29	336	33	77	56	---	75	79	257	44	34	33	30
30	94	33	64	65	---	73	68	318	43	33	28	28
31	69	---	62	75	---	73	---	257	---	38	27	---
TOTAL	2794	1104	2609	3717	6610	4001	2314	2601	3967	2038	1301	808
MEAN	90.1	36.8	84.2	120	236	129	77.1	83.9	132	65.7	42.0	26.9
MAX	1270	57	302	723	2230	386	132	318	631	201	107	72
MIN	15	29	30	51	75	73	57	37	43	33	26	21
CFSM	.92	.38	.86	1.22	2.41	1.32	.79	.86	1.35	.67	.43	.27
IN.	1.06	.42	.99	1.41	2.51	1.52	.88	.99	1.51	.77	.49	.31

CAL YR 1981 TOTAL 19677 MEAN 53.9 MAX 1270 MIN 10 CFSM .55 IN 7.47
WTR YR 1982 TOTAL 33864 MEAN 92.8 MAX 2230 MIN 15 CFSM .95 IN 12.85

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA

LOCATION.--Lat 36°54'54", long 78°44'28", Halifax County, Hydrologic Unit 03010102, on right bank 14 ft (4 m) downstream from bridge on State Highway 746, 2.8 mi (4.5 km) northwest of Randolph, 3.6 mi (5.8 km) upstream from Roanoke Creek, and at mile 227.3 (365.7 km).
DRAINAGE AREA.--2,977 mi^2 (7,710 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1900 to September 1906, October 1927 to September 1930, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1902, published as Staunton River at Randolph. Gage heights collected since 1905 at this site or at former site are contained in reports of the National Weather Service.
REVISED RECORDS.--WSP 1203: 1928-30. WSP 1303: 1901-6. WSP 2104: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 307.59 ft (93.753 m) National Geodetic Vertical Datum of 1929. Aug. 27, 1900, to Oct. 13, 1902, nonrecording gage at site 3.2 mi (5.1 km) downstream at datum about 5.9 ft (1.80 m) lower. Oct. 14, 1902, to Aug. 11, 1906, and Oct. 1, 1927, to Mar. 31, 1930, nonrecording gage at site of original gage at datum 3.93 ft (1.198 m) lower than present datum.
REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 68.7 mi (110.5 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 86.7 mi (139.5 km) upstream. Gage-height and Corps of Engineers satellite telemeters at station.
AVERAGE DISCHARGE.--41 years, 3,048 ft^3/s (86.32 m^3/s), 13.90 in/yr (353 mm/yr), unadjusted.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,000 ft^3/s (2,750 m^3/s) Dec. 31, 1901, gage height, 35.0 ft (10.67 m), from graph based on gage readings, site and datum then in use; minimum daily, 179 ft^3/s (5.07 m^3/s) Sept. 8, 1965, July 7, 1970.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 41.6 ft (12.68 m), present site and datum, discharge, 150,000 ft^3/s (4,250 m^3/s), from information by Corps of Engineers.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,100 ft^3/s (683 m^3/s) Feb. 4, gage height, 23.86 ft (7.273 m); minimum, 463 ft^3/s (13.1 m^3/s) Sept. 7, gage height, 4.72 ft (1.439 m); minimum daily, 480 ft^3/s (13.6 m^3/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	621	1060	742	2020	2800	1460	2290	1910	3720	3340	967	1340
2	627	949	760	2890	5500	3850	2470	1840	4340	1990	796	1230
3	648	904	828	3080	9990	4220	3410	2130	4360	1550	997	1170
4	637	878	867	10100	21700	5280	1990	1970	5560	1120	1360	1130
5	641	833	827	14200	19800	5110	1010	2000	7610	1820	1390	898
6	631	800	768	12300	10200	5150	1990	1870	5330	3000	1400	562
7	571	780	731	5640	4030	5180	2330	1810	2980	2030	1420	480
8	575	796	709	3730	2430	8810	1680	1820	4110	1520	1560	866
9	578	809	703	4040	4080	10800	1470	1750	5580	1470	1330	1290
10	573	747	675	2130	4280	5700	1750	1750	5230	2650	3320	1180
11	569	745	693	932	3270	4670	1310	1750	8790	1490	3200	1110
12	580	770	669	750	1980	4320	890	1730	6940	2400	2700	1090
13	587	757	673	800	1390	3900	1260	1700	5840	2410	2110	545
14	590	747	705	1800	1300	1910	1800	1660	16200	3450	1440	661
15	580	741	1050	1700	1250	1370	1780	1660	16500	3480	1190	1180
16	583	709	3540	1600	1700	5510	1860	1710	8900	2180	1200	1250
17	609	714	3180	1000	6720	4790	1600	1800	6640	1830	1110	1160
18	599	736	1860	1500	6700	3010	1310	1780	5120	1140	1770	1000
19	623	756	1420	1600	6770	1960	1510	1670	3460	744	1810	838
20	608	750	1130	1400	6260	2340	1530	2180	1810	1280	1390	511
21	528	713	963	1700	4100	2010	1790	2730	1840	1570	1290	872
22	551	698	1130	2500	2980	3280	1930	1980	3070	1430	985	1270
23	594	714	1260	5600	4370	5220	1810	2080	2450	1190	617	1220
24	634	725	1340	1650	3440	2500	1750	2710	2130	1890	977	1170
25	695	838	1850	1380	2670	1980	1800	3110	1930	1490	1410	948
26	889	873	3230	2600	2740	2050	1890	2250	1800	1100	1230	624
27	4430	825	2190	2600	2730	2660	2220	2160	1240	1190	1140	800
28	8610	800	1560	1970	1830	2070	2790	4190	940	1580	1090	1240
29	4010	759	1280	1090	---	1200	2570	3750	1620	1570	875	1220
30	2000	736	1090	1080	---	2780	2130	4230	3000	1540	556	1190
31	1290	---	1010	1320	---	2270	---	3470	---	1200	885	---
TOTAL	36261	23662	39433	96702	147010	117360	55920	69150	149040	56644	43515	30045
MEAN	1170	789	1272	3119	5250	3786	1864	2231	4968	1827	1404	1002
MAX	8610	1060	3540	14200	21700	10800	3410	4230	16500	3480	3320	1340
MIN	528	698	669	750	1250	1200	890	1660	940	744	556	480
(*)	+8	-58	+421	+432	+62	+22	+67	+19	-279	-28	-119	-244
MEAN‡	1178	731	1693	3551	5312	3808	1931	2250	4689	1798	1285	758
CFSM‡	.40	.25	.57	1.19	1.78	1.28	.65	.76	1.58	.60	.43	.25
IN‡	.46	.27	.66	1.38	1.86	1.48	.72	.87	1.76	.70	.50	.28

CAL YR 1981 TOTAL 406052 MEAN 1112 MAX 8610 MIN 345 MEAN‡ 1209 CFSM‡ .41 IN‡ 5.51
WTR YR 1982 TOTAL 864742 MEAN 2369 MAX 21700 MIN 480 MEAN‡ 2396 CFSM‡ .80 IN‡ 10.93

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.
‡ Adjusted for change in contents.

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1950 to September 1956, April 1968 to current year.
WATER TEMPERATURES: October 1950 to September 1956, April 1968 to current year.
SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 470 micromhos May 9, 1976; minimum daily, 26 micromhos Jan. 1, 1979.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 15, 1968; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 170 micromhos Jan. 25, 27; minimum daily, 71 micromhos May 29.
WATER TEMPERATURES: Maximum daily, 26.0°C July 22, 23; minimum daily, 1.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
DEC 07...	1315	730	120	7.6	5.0	15	44	11	4.1	6.1	1.8
FEB 02...	1245	6910	85	7.3	2.0	80	30	7.2	2.8	4.2	1.8
MAR 22...	1130	3970	98	7.2	10.5	10	34	8.3	3.3	4.6	1.5
MAY 10...	1445	1820	138	7.7	19.5	<1	51	12	5.0	6.5	1.9
JUN 17...	0715	7940	135	7.5	21.0	7	52	12	5.3	6.2	2.0
JUL 26...	1415	1040	137	7.6	27.5	15	49	12	4.6	5.9	1.9
SEP 13...	1430	531	162	7.8	24.5	10	57	14	5.4	6.9	2.1

< Actual value is known to be less than the value shown.

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
DEC 07...	43	9.6	5.7	.1	7.9	91	72	<.010	.19	<.010	160
FEB 02...	25	10	4.8	<.1	9.6	60	56	<.010	.56	.030	170
MAR 22...	32	8.9	4.5	<.1	10	62	60	<.010	.27	<.010	130
MAY 10...	46	10	6.2	.1	7.7	73	77	.030	.21	<.010	47
JUN 17...	43	12	6.3	.1	8.2	83	78	<.010	.41	.010	110
JUL 26...	44	9.0	5.9	.1	10	83	76	<.010	.29	.020	85
SEP 13...	54	10	7.4	.2	8.6	96	87	<.010	.22	<.010	71

< Actual value is known to be less than the value shown.

02066000 ROANOKE RIVER AT RANDOLPH, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	116	140	160	100	109	117	113	95	---	---	143
2	---	116	145	120	95	84	119	116	101	---	---	145
3	155	119	143	100	140	108	119	117	137	---	125	125
4	157	119	153	100	155	99	120	116	138	---	130	143
5	154	123	130	90	150	114	123	120	126	---	130	140
6	163	134	135	---	160	113	120	121	74	118	130	145
7	164	136	135	---	138	82	120	122	72	82	137	150
8	166	139	140	163	140	83	118	123	75	82	137	133
9	155	139	130	160	160	116	101	123	125	83	137	140
10	155	155	123	158	115	120	99	122	92	83	139	150
11	150	150	125	143	163	114	104	128	90	84	139	155
12	155	150	125	155	109	116	104	125	83	87	139	153
13	156	148	125	---	106	104	111	130	93	88	130	150
14	153	145	130	---	104	106	114	135	93	88	135	140
15	152	150	120	---	119	102	116	134	120	117	136	143
16	157	150	150	---	115	82	109	136	121	115	136	155
17	151	150	130	---	77	115	102	137	125	114	125	155
18	149	155	133	---	104	117	103	130	96	118	120	143
19	149	150	110	---	107	107	103	136	---	117	120	140
20	156	155	---	---	109	100	103	138	---	104	120	157
21	155	158	125	---	108	99	103	88	---	115	125	155
22	149	153	155	---	109	98	118	83	---	102	125	123
23	154	150	160	---	109	118	118	83	---	132	150	---
24	154	143	160	155	119	109	119	84	---	123	130	120
25	139	140	155	170	118	111	121	---	---	133	153	123
26	138	155	130	160	120	99	119	132	---	120	135	120
27	---	150	130	170	119	105	---	135	---	100	145	123
28	75	143	130	160	116	102	101	128	---	---	145	118
29	82	140	130	158	---	102	100	71	---	---	150	127
30	96	140	130	155	---	119	107	93	---	---	145	120
31	109	---	155	123	---	120	---	96	---	---	150	---
MEAN	145	142	136	144	121	106	111	117	103	105	135	139

WTR YR 1982 MEAN 126 MAX 170 MIN 71

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	12.0	7.0	5.0	3.0	3.0	14.0	15.0	22.0	---	---	---
2	---	12.0	7.5	4.0	4.0	4.0	13.0	15.0	20.5	---	---	---
3	15.0	13.0	7.0	5.0	6.5	5.0	12.0	15.0	21.0	---	---	---
4	15.0	13.0	7.0	5.0	5.0	6.0	11.0	15.0	21.0	---	---	---
5	14.0	13.5	7.0	7.0	5.0	4.0	10.0	17.0	19.0	---	---	---
6	16.0	12.0	7.0	---	6.5	3.0	10.0	17.5	19.0	24.0	---	---
7	14.0	11.5	7.0	---	5.0	6.0	8.0	18.0	19.0	24.0	24.0	---
8	13.0	8.0	9.0	7.0	5.0	6.0	9.0	15.0	20.0	24.0	23.0	---
9	11.0	7.5	7.0	7.0	4.0	8.0	9.0	16.0	20.5	24.0	23.5	---
10	11.0	8.0	7.5	1.0	4.0	7.5	11.0	17.0	19.5	25.0	24.0	---
11	11.0	8.0	6.0	3.0	3.0	8.0	11.5	16.0	19.5	24.5	23.5	---
12	10.0	8.0	6.0	1.0	3.0	12.0	11.5	16.0	19.0	25.0	22.0	---
13	10.0	7.0	5.5	---	5.0	9.0	14.0	---	19.5	25.0	22.0	---
14	10.0	6.5	5.0	---	4.5	9.0	14.0	19.0	19.5	24.0	23.5	16.0
15	10.5	6.5	6.0	---	5.0	10.0	15.0	19.0	20.0	25.0	23.5	16.0
16	12.5	6.5	5.0	---	5.0	8.5	15.0	19.0	20.0	24.5	24.0	---
17	12.0	10.0	5.0	---	4.0	9.0	15.0	20.0	20.0	24.5	23.0	15.0
18	12.0	9.5	5.5	---	4.0	11.0	15.0	19.5	20.0	25.5	23.0	15.0
19	10.5	9.0	4.0	---	4.5	12.0	14.0	21.0	---	25.5	23.0	16.0
20	8.0	8.5	---	---	5.0	10.0	14.0	20.5	---	25.0	23.0	15.0
21	7.0	7.5	5.0	---	7.0	10.0	15.0	19.5	---	25.0	23.0	14.0
22	8.0	4.0	3.0	---	8.0	10.0	18.0	21.0	---	26.0	23.0	17.0
23	8.0	3.0	5.5	---	7.0	10.0	13.0	21.0	---	26.0	22.5	---
24	11.0	7.0	3.0	1.0	8.0	10.0	15.0	21.0	---	25.5	23.0	18.0
25	11.0	7.0	2.0	1.0	7.0	10.0	15.0	---	---	25.5	23.5	17.0
26	11.0	7.0	3.0	1.0	5.0	11.0	16.0	20.5	---	25.5	---	16.0
27	---	9.0	5.0	3.0	4.0	10.0	---	20.5	---	25.5	---	17.0
28	14.5	7.0	6.0	3.0	3.0	8.0	14.0	21.0	---	---	---	18.0
29	17.0	6.0	6.0	4.0	---	8.0	14.0	21.0	---	---	---	17.0
30	13.0	6.0	4.0	1.0	---	13.0	15.0	21.5	---	---	---	17.5
31	13.0	---	4.0	2.0	---	13.0	---	22.0	---	---	---	---
MEAN	12.0	8.5	5.5	3.5	5.0	8.5	13.0	18.5	20.0	25.0	23.0	16.5

WTR YR 1982 MEAN 12.5 MAX 26.0 [illegible] [illegible]

02067800; 02067820 TALBOTT AND TOWNES RESERVOIRS NEAR KIBLER, VA

LOCATION.--Talbott Dam: Lat 36°40'39", long 80°23'52", Patrick County, Hydrologic Unit 03010103, on Dan River 4.5 mi (7.2 km) northeast of Kibler. Townes Dam: Lat 36°41'10", long 80°25'50", Patrick County, Hydrologic Unit 03010103, on Dan River about 4 mi (6 km) north of Kibler.

DRAINAGE AREA.--Talbott Dam, 20.2 mi² (52.3 km²); Townes Dam, 32.9 mi² (85.2 km²).

PERIOD OF RECORD.--February 1939 to December 1945, January 1948 to September 1960 (published in WSP 1723), and October 1960 to current year.

REMARKS.--The two reservoirs are operated as a unit for storage of water for Pinnacles hydroelectric plant. Total capacity of Talbott Reservoir, 8,035 acre-ft (9.91 hm³), and Townes Reservoir, 1,377 acre-ft (1.70 hm³). Storage began in Talbott Reservoir on Feb. 13, 1939, and in Townes Reservoir several months earlier.

COOPERATION.--Records furnished by city of Danville.

COMBINED MONTHEND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	5480	
Oct. 31	6160	+680
Nov. 30	5730	-430
Dec. 31	6200	+470
CAL YR 1981		+870
Jan. 31	7690	+1490
Feb. 28	7790	+100
Mar. 31	7300	-490
Apr. 30	7980	+680
May 31	7760	-220
June 30	7440	-320
July 31	7080	-360
Aug. 31	7320	+240
Sept. 30	6880	-440
WTR YR 1982		+1400

02068500 DAN RIVER NEAR FRANCISCO, NC

LOCATION.--Lat 36°30'53", long 80°18'11", Stokes County, Hydrologic Unit 03010103, on left bank 200 ft (61 m) upstream from bridge on State Highway 704, 700 ft (213 m) downstream from Georges Mill, 0.2 mi (0.3 km) downstream from Elk Creek, 3 mi (5 km) east of Francisco, and 7.9 mi (12.7 km) downstream from Little Dan River.
DRAINAGE AREA.--129 mi² (334 km²).
PERIOD OF RECORD.--August 1924 to current year. Monthly discharge only for some periods, published in WSP 1303.
REVISED RECORDS.--WSP 1303: 1938-50 (monthly runoff). WSP 1433: 1925-26, 1928-29, 1931, 1942, 1948. WDR NC-80-1: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 831.99 ft (253.591 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1929, nonrecording gage at same site and datum.
REMARKS.--Records good. Considerable diurnal fluctuation and regulation from mills and powerplants above station. Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) above Pinnacles hydroelectric plant in Virginia, 28 mi (45 km) above station, were completed in 1938. Water-quality records for some prior periods have been collected at this location.
AVERAGE DISCHARGE.--58 years, 190 ft³/s (5.381 m³/s), 20.00 in/yr (508 mm/yr), unadjusted.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s (535 m³/s) Sept. 22, 1979, gage height, 18.11 ft (5.520 m), from rating curve extended above 8,400 ft³/s (238 m³/s) on basis of slope-area measurement of peak flow; minimum, 7.1 ft³/s (0.20 m³/s) Sept. 8, 1932, gage height, 0.43 ft (0.131 m); minimum daily, 27 ft³/s (0.76 m³/s) Aug. 24, 1981.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1916 reached a stage of about 15 ft (4.6 m), from information by local residents, discharge, 16,000 ft³/s (453 m³/s).
EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	0530	2400	68.0	4.95	1.509	May 28	0530	3320	94.0	5.86	1.786
Feb. 3	1330	2240	63.4	4.79	1.460	June 13	0630	*6370	180	8.43	2.569
Apr. 27	2100	2890	81.8	5.44	1.658						

Minimum discharge, 37 ft³/s (1.05 m³/s) Oct. 9, gage height, 1.02 ft (0.311 m); minimum daily, 44 ft³/s (1.25 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	82	99	278	225	227	149	353	247	191	119	115
2	112	79	107	160	161	276	148	315	229	136	107	112
3	50	85	67	176	1160	232	204	305	408	132	114	162
4	47	83	67	627	653	255	228	244	528	129	115	112
5	47	89	71	361	314	214	193	197	479	130	143	91
6	52	85	64	216	337	155	250	180	338	176	159	90
7	78	80	60	171	235	217	240	205	286	160	149	89
8	45	73	66	145	197	230	175	212	252	157	129	89
9	44	69	63	175	241	241	204	181	234	218	454	89
10	48	93	97	185	250	264	145	160	380	215	167	90
11	46	96	113	238	214	230	134	165	231	157	167	90
12	48	74	79	183	160	225	131	134	376	170	133	89
13	47	97	77	148	159	220	129	157	2220	169	117	88
14	48	90	67	140	152	216	149	188	632	153	112	94
15	48	55	196	135	169	217	206	195	436	165	109	103
16	48	55	206	138	252	214	176	142	394	223	106	128
17	45	78	143	112	270	187	163	126	384	201	114	108
18	47	74	105	138	270	181	192	215	372	197	104	85
19	47	71	112	144	225	173	139	179	335	142	109	84
20	50	70	134	124	182	203	181	125	316	172	101	91
21	66	71	136	150	172	217	167	164	313	156	107	89
22	57	88	145	150	162	172	162	149	214	162	97	120
23	55	73	94	138	156	176	157	178	158	141	97	93
24	63	103	106	123	161	153	154	215	188	226	99	89
25	54	108	129	127	189	155	155	143	171	151	136	89
26	106	63	120	122	194	195	373	163	236	132	135	104
27	910	59	108	141	234	160	876	166	210	181	100	110
28	226	56	101	157	194	153	1060	966	243	184	101	95
29	124	54	107	159	---	158	467	581	282	164	95	91
30	97	54	101	130	---	151	389	467	221	112	93	91
31	88	---	122	113	---	149	---	287	---	116	103	---
TOTAL	2890	2307	3262	5504	7288	6216	7496	7457	11313	5118	3991	2970
MEAN	93.2	76.9	105	178	260	201	250	241	377	165	129	99.0
MAX	910	108	206	627	1160	276	1060	966	2220	226	454	162
MIN	44	54	60	112	152	149	129	125	158	112	93	84
(*)	+11	-7	+8	+24	+2	-8	+11	-4	-5	-6	+4	-7

CAL YR 1981 TOTAL 35749 MEAN 97.9 MAX 910 MIN 27 MEAN‡ 98.9 CFSM‡ .77 IN‡ 10.45
WTR YR 1982 TOTAL 65812 MEAN 180 MAX 2220 MIN 44 MEAN‡ 182 CFSM‡ 1.41 IN‡ 19.14

* Change in contents, equivalent in cubic feet per second, in Talbott and Townes Reservoirs; furnished by city of Danville, Va.

‡ Adjusted for change in contents.

02069700 SOUTH MAYO RIVER NEAR NETTLERIDGE, VA

LOCATION.--Lat 36°34'15", long 80°07'47", Patrick County, Hydrologic Unit 03010103, on right bank 60 ft (18 m) downstream from bridge on State Highway 700, 1.2 mi (1.9 km) southeast of Nettleridge, 1.4 mi (2.3 km) downstream from Russell Creek, and 3.6 mi (5.8 km) upstream from Spoon Creek.

DRAINAGE AREA.--84.6 mi² (219.1 km²).

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-74-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 871.60 ft (265.664 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 9, 1964, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--20 years, 125 ft³/s (3.540 m³/s), 20.07 in/yr (510 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) Sept. 22, 1979, gage height, 22.00 ft (6.706 m), from rating curve extended above 2,900 ft³/s (82 m³/s) on basis of contracted-opening measurements at gage heights 18.32 ft (5.584 m) and 22.00 ft (6.706 m); minimum, 20 ft³/s (0.57 m³/s) Aug. 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s (37 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 27	0700	1530	43.3	7.62	2.323
Feb. 3	1600	1350	38.2	7.22	2.201
Apr. 27	2330	2000	56.6	8.60	2.621
June 13	0730	*2120	60.0	8.83	2.691

Minimum discharge, 27 ft³/s (0.76 m³/s) Oct. 20, gage height, 2.97 ft (0.905 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	59	43	212	132	119	86	178	170	108	71	63
2	32	56	64	148	98	158	82	162	144	100	63	59
3	32	52	48	177	698	184	113	149	125	96	59	55
4	31	50	49	588	432	154	114	138	143	92	57	48
5	31	55	52	280	215	138	101	131	222	92	58	45
6	31	68	45	174	162	132	104	125	152	92	80	45
7	30	50	44	140	137	188	92	120	131	88	60	44
8	28	47	43	119	124	168	92	116	119	88	67	44
9	28	46	41	102	122	144	104	110	113	107	212	43
10	29	45	39	82	119	132	98	106	150	124	101	44
11	30	44	38	66	106	125	94	101	130	95	100	44
12	31	42	39	62	98	119	90	95	185	91	116	44
13	30	41	40	60	100	113	87	91	1250	110	78	42
14	30	41	48	60	94	107	96	88	492	107	70	44
15	30	41	156	61	92	107	120	85	268	95	66	51
16	30	40	183	63	107	102	101	82	205	106	62	44
17	28	40	100	67	182	100	102	86	258	88	59	40
18	28	39	78	70	176	94	110	88	232	82	59	39
19	29	38	65	77	150	94	98	85	168	80	57	38
20	28	40	58	82	134	102	96	82	149	82	55	44
21	28	39	64	118	124	116	94	106	142	75	53	44
22	30	38	72	119	114	100	87	102	131	74	51	70
23	34	38	87	101	106	91	85	88	126	76	51	50
24	44	49	78	100	101	90	82	106	119	110	52	45
25	34	51	100	88	95	91	81	143	114	82	71	45
26	75	43	98	83	88	119	338	120	114	75	58	60
27	720	41	92	73	104	95	654	131	131	69	54	70
28	137	41	87	70	110	90	878	289	130	68	55	54
29	87	38	83	67	---	87	323	267	155	65	51	48
30	76	38	78	63	---	86	222	208	122	65	48	47
31	66	---	85	78	---	86	---	188	---	68	53	---
TOTAL	1928	1350	2197	3650	4320	3631	4824	3966	6090	2750	2147	1453
MEAN	62.2	45.0	70.9	118	154	117	161	128	203	88.7	69.3	48.4
MAX	720	68	183	588	698	188	878	289	1250	124	212	70
MIN	28	38	38	60	88	86	81	82	113	65	48	38
CFSM	.74	.53	.84	1.40	1.82	1.38	1.90	1.51	2.40	1.05	.82	.57
IN.	.85	.59	.97	1.60	1.90	1.60	2.12	1.74	2.68	1.21	.94	.64

CAL YR 1981 TOTAL 21578 MEAN 59.1 MAX 720 MIN 21 CFSM .70 IN 9.49
WTR YR 1982 TOTAL 38306 MEAN 105 MAX 1250 MIN 28 CFSM 1.24 IN 16.84

02070000 NORTH MAYO RIVER NEAR SPENCER, VA

LOCATION.--Lat 36°34'05", long 79°59'15", Henry County, Hydrologic Unit 03010103, on left bank 800 ft (244 m) downstream from bridge on State Highway 629 at Moores Mill, 2.1 mi (3.4 km) downstream from Horse Pasture Creek, and 3.8 mi (6.1 km) southeast of Spencer.

DRAINAGE AREA.--108 mi² (280 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1929-32(M), 1934(M).

GAGE.--Water-stage recorder. Datum of gage is 730.94 ft (222.791 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 23, 1936, nonrecording gage at site 800 ft (244 m) upstream at datum 1.50 ft (0.457 m) higher. July 25 to Sept. 27, 1936, nonrecording gage at present site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 126 ft³/s (3.568 m³/s), 15.84 in/yr (402 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s (487 m³/s) Oct. 9, 1947, gage height, 15.80 ft (4.816 m), from rating curve extended above 7,200 ft³/s (200 m³/s) on basis of slope-area measurement at gage height 13.41 ft (4.087 m) and velocity-area study; minimum, 14 ft³/s (0.40 m³/s) Aug. 11, 1956; minimum gage height, 1.08 ft (0.329 m) Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) Oct. 27, gage height, 4.30 ft (1.311 m), no peak above base of 1,400 ft³/s (40 m³/s); minimum, 28 ft³/s (0.79 m³/s) Sept. 17, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	61	48	270	142	124	88	137	218	96	54	48
2	32	58	71	202	113	202	87	126	156	78	48	46
3	33	54	60	208	525	318	102	117	117	74	43	43
4	32	53	57	624	455	218	113	107	119	74	42	38
5	34	55	61	308	218	171	96	100	206	74	44	36
6	34	64	55	156	159	162	100	96	145	74	72	35
7	34	54	53	119	132	286	90	94	115	69	50	35
8	32	49	52	98	119	315	90	92	100	68	46	34
9	32	49	49	85	115	192	102	90	92	68	112	34
10	34	49	48	78	113	154	100	85	102	69	74	35
11	35	49	47	72	100	137	92	83	102	68	63	36
12	36	49	48	70	94	128	90	79	96	68	89	35
13	36	48	50	69	96	119	87	78	503	74	61	34
14	35	48	55	69	94	113	96	76	280	104	54	34
15	36	48	222	70	92	109	145	74	159	74	52	35
16	36	48	318	73	102	109	107	72	130	68	49	32
17	35	48	134	75	209	107	100	78	132	63	46	30
18	36	46	98	82	294	100	109	71	224	58	55	29
19	36	46	81	92	192	98	94	69	134	55	49	29
20	35	46	100	128	154	111	90	69	115	57	45	32
21	34	46	73	156	132	119	90	71	105	55	43	40
22	37	45	80	145	117	107	87	98	98	54	42	55
23	40	45	92	117	107	98	85	128	98	54	41	45
24	45	54	81	126	100	96	81	94	88	60	41	38
25	43	61	115	111	96	96	81	388	87	57	53	38
26	55	52	148	98	90	126	256	165	87	52	49	48
27	580	50	130	78	100	105	446	132	87	49	44	79
28	186	49	111	72	121	96	416	134	96	49	44	52
29	96	48	98	70	---	92	218	148	88	46	41	44
30	76	46	87	83	---	90	159	156	83	48	38	42
31	66	---	90	90	---	90	---	128	---	50	41	---
TOTAL	1945	1518	2812	4094	4381	4388	3897	3435	4162	2007	1625	1191
MEAN	62.7	50.6	90.7	132	156	142	130	111	139	64.7	52.4	39.7
MAX	580	64	318	624	525	318	446	388	503	104	112	79
MIN	32	45	47	69	90	90	81	69	83	46	38	29
CFSM	.58	.47	.84	1.22	1.44	1.32	1.20	1.03	1.29	.60	.49	.37
IN.	.67	.52	.97	1.41	1.51	1.51	1.34	1.18	1.43	.69	.56	.41

CAL YR 1981 TOTAL 24404 MEAN 66.9 MAX 580 MIN 19 CFSM .62 IN 8.41
WTR YR 1982 TOTAL 35455 MEAN 97.1 MAX 624 MIN 29 CFSM .90 IN 12.21

02071900 PHILPOTT LAKE NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'52", long 80°01'40", Henry County, Hydrologic Unit 03010103, at Philpott Dam on Smith River, 1.5 mi (2.4 km) west of Philpott, 12.0 mi (19.3 km) upstream from Reed Creek, and at mile 44.3 (71.3 km).

DRAINAGE AREA.--216 mi² (559 km²).

PERIOD OF RECORD.--August 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 985 ft (300.2 m), is ungated and 120 ft (40 m) long. Storage began in August 1950 during construction; initial filling started in December 1951; water in reservoir first reached rule-curve elevation in July 1953. Total capacity at maximum flood-control pool elevation, 998 ft (304.2 m), is 247,400 acre-ft (305 hm³) of which 47,000 acre-ft (58.0 hm³) is above the spillway crest; 34,200 acre-ft (42.2 hm³) is controlled flood storage between elevations 974 ft (296.9 m), maximum power pool, and 985 ft (300.2 m); 57,800 acre-ft (71.3 hm³) is available for power between elevations 951 ft (289.9 m), minimum power pool, and 974 ft (296.9 m); and 108,400 acre-ft (134 hm³) is inactive and dead storage below elevation 951 ft (289.9 m). Usable capacity is 92,000 acre-ft (113 hm³) between elevations 951 ft (289.9 m) and 985 ft (300.2 m). Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for pollution abatement and industrial water supply, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 191,700 acre-ft (236 hm³) June 22, 1972, elevation, 983.06 ft (299.637 m); minimum (after first filling to rule curve), 64,540 acre-ft (79.6 hm³) Sept. 26, 1956, elevation, 927.59 ft (282.729 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 173,360 acre-ft (214 hm³) June 15, elevation, 976.43 ft (297.616 m); minimum, 122,880 acre-ft (152 hm³) Dec. 11, elevation, 957.44 ft (291.828 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	961.69	133080	
Oct. 31	959.05	126670	-6410
Nov. 30	957.67	123420	-3250
Dec. 31	958.20	124660	+1240
CAL YR 1981			-31040
Jan. 31	962.55	135220	+10560
Feb. 28	968.50	150740	+15520
Mar. 31	973.01	163330	+12590
Apr. 30	975.05	169260	+5930
May 31	976.29	172940	+3680
June 30	974.20	166770	-6170
July 31	972.64	162270	-4500
Aug. 31	971.46	158920	-3350
Sept. 30	968.56	150900	-8020
WTR YR 1982			+17820

02072000 SMITH RIVER NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'50", long 80°01'30", Franklin County, Hydrologic Unit 03010103, on left bank 900 ft (270 m) downstream from Philpott Dam, 3.1 mi (5.0 km) west of Philpott, 11.6 mi (18.7 km) upstream from Reed Creek, and at mile 44.1 (71.0 km).

DRAINAGE AREA.--216 mi² (559 km²).

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1553: 1953(M), 1955-56(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 804.27 ft (245.141 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 8, 1952, at site 1.9 mi (3.1 km) downstream at different datum.

REMARKS.--Records good. Since August 1950, flow regulated by Philpott Lake (station 02071900) 0.2 mi (0.3 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--36 years, 276 ft³/s (7.816 m³/s), 17.35 in/yr (441 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) June 29, 1949, gage height, 20.3 ft (6.19 m), site and datum then in use, from rating curve extended above 9,700 ft³/s (270 m³/s) on basis of slope-area measurements at gage heights 18.2 ft (5.55 m) and 20.3 ft (6.19 m); minimum, 4.0 ft³/s (0.11 m³/s) Aug. 12, 1953, gage height, 1.50 ft (0.457 m); minimum daily, 24 ft³/s (0.68 m³/s) Dec. 16, 17, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,480 ft³/s (41.9 m³/s) Dec. 9, Feb. 15, gage height, 5.17 ft (1.576 m); minimum, 9.8 ft³/s (0.28 m³/s) Oct. 30, gage height, 1.86 ft (0.567 m); minimum daily, 36 ft³/s (1.02 m³/s) several days in February and March.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	259	47	153	156	97	85	87	45	825	243	48	144
2	260	154	151	47	96	85	89	44	1290	243	298	145
3	52	157	151	99	98	82	46	532	1230	46	299	144
4	52	160	154	97	93	84	46	531	1230	46	300	47
5	210	159	46	149	96	82	192	540	46	293	301	48
6	202	152	47	148	45	37	190	522	44	275	297	244
7	215	49	162	147	46	37	194	536	645	292	49	250
8	191	49	161	45	93	83	188	45	641	297	49	260
9	210	159	159	45	95	82	183	45	613	294	305	253
10	52	158	154	46	86	82	46	334	634	46	308	258
11	52	157	152	151	90	83	46	339	653	46	298	47
12	377	162	46	147	89	82	188	334	45	293	303	47
13	372	160	47	94	37	36	188	337	48	293	300	250
14	371	44	153	94	37	36	188	330	628	290	48	249
15	358	44	152	88	90	81	190	46	633	289	49	251
16	362	157	150	46	84	81	189	46	632	289	153	257
17	47	157	149	46	89	86	45	189	640	46	144	259
18	47	157	159	117	84	84	44	189	637	47	147	47
19	340	153	49	100	86	80	189	189	632	300	149	47
20	340	153	49	96	36	36	190	189	44	299	148	259
21	332	47	154	98	36	36	188	189	642	297	49	253
22	329	47	153	95	85	82	189	45	642	298	49	244
23	335	155	150	46	88	82	187	46	645	300	145	249
24	42	152	151	45	83	82	45	191	639	47	145	253
25	42	156	156	95	84	82	45	188	632	47	152	47
26	345	152	46	98	87	81	286	436	42	297	147	48
27	344	151	46	97	37	36	284	441	44	293	152	256
28	332	47	153	96	37	36	286	451	244	289	51	265
29	157	47	155	97	---	84	286	45	242	297	50	552
30	166	152	154	46	---	81	284	44	244	298	151	450
31	47	---	154	46	---	81	---	458	---	48	147	---
TOTAL	6840	3694	3916	2817	2104	2187	4798	7896	15806	6778	5231	6123
MEAN	221	123	126	90.9	75.1	70.5	160	255	527	219	169	204
MAX	377	162	162	156	98	86	286	540	1290	300	308	552
MIN	42	44	46	45	36	36	44	44	42	46	48	47
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135
MEAN‡	117	68	146	262.9	354.1	275.5	260	315	423	146	115	69
CFSM‡	.54	.31	.68	1.22	1.64	1.28	1.20	1.46	1.96	.68	.53	.32
IN‡	.62	.35	.78	1.40	1.71	1.47	1.34	1.68	2.19	.78	.61	.36

CAL YR 1981 TOTAL 56236 MEAN 154 MAX 470 MIN 42 MEAN‡ 111 CFSM‡ .51 IN‡ 6.98
WTR YR 1982 TOTAL 68190 MEAN 187 MAX 1290 MIN 36 MEAN‡ 212 CFSM‡ .98 IN‡ 13.33

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02072500 SMITH RIVER AT BASSETT, VA

LOCATION.--Lat 36°46'12", long 80°00'04", Henry County, Hydrologic Unit 03010103, on left bank 25 ft (8 m) upstream from bridge on State Highway 666 at north edge of North Bassett, 1.0 mi (1.6 km) northwest of Bassett, 3.0 mi (4.8 km) downstream from Town Creek, 5.6 mi (9.0 km) upstream from Reed Creek, 6.2 mi (10.0 km) downstream from Philpott Dam, and at mile 38.1 (61.3 km).

DRAINAGE AREA.--259 mi² (671 km²).

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 753.09 ft (229.542 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for period of no gage-height record, Oct. 7 to Dec. 8, which are fair, and those above 5,000 ft³/s (142 m³/s), which are poor. Since August 1950, flow regulated by Philpott Lake (station 02071900) 6.2 mi (10.0 km) upstream. Gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--43 years, 328 ft³/s (9.289 m³/s), 17.20 in/yr (437 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s (753 m³/s) Aug. 14, 1940, gage height, 18.28 ft (5.572 m); minimum, 19 ft³/s (0.54 m³/s) July 19, 1956; minimum daily, 44 ft³/s (1.25 m³/s) Aug. 23, 1964; minimum gage height, 1.06 ft (0.323 m) Sept. 18, 26, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 19, 1937, reached a stage of about 22.9 ft (6.98 m), from information by local residents, discharge, 38,000 ft³/s (1,100 m³/s), from rating curve extended above 23,000 ft³/s (650 m³/s) on basis of backwater studies and records for station at Martinsville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,200 ft³/s (317 m³/s) May 28, gage height, 11.87 ft (3.618 m); minimum, 44 ft³/s (1.25 m³/s) during period of no gage-height record, Oct. 21 to Dec. 8, and May 6, gage height, 1.39 ft (0.424 m); minimum daily, 54 ft³/s (1.53 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	282	62	180	263	158	115	109	75	780	274	67	162
2	289	175	185	113	132	132	112	71	1400	274	319	161
3	69	178	175	311	337	169	78	563	1330	67	321	161
4	59	179	175	379	216	150	73	568	1370	68	322	57
5	232	180	62	242	151	136	222	579	300	322	337	56
6	211	185	60	202	84	103	222	561	74	308	332	260
7	234	62	175	187	76	185	223	569	680	321	63	269
8	215	58	180	75	121	197	216	76	675	331	91	283
9	225	175	177	72	124	144	216	65	680	323	353	270
10	65	180	172	64	116	128	70	351	675	68	354	276
11	63	170	171	187	114	123	68	364	690	64	338	59
12	295	180	58	186	111	120	215	362	73	320	335	56
13	390	170	58	114	63	67	215	365	770	324	327	267
14	385	58	179	116	61	65	215	360	780	320	64	266
15	380	57	252	109	112	116	220	71	750	320	62	264
16	370	165	241	65	114	116	215	62	700	321	167	271
17	58	175	192	65	185	113	70	212	720	65	163	272
18	55	180	192	142	188	113	71	212	730	62	168	56
19	310	175	68	118	144	111	217	215	755	326	165	54
20	355	170	65	118	78	65	217	221	87	326	163	275
21	350	64	175	142	71	65	214	226	690	323	60	270
22	355	62	184	139	119	112	215	74	706	322	59	270
23	365	175	187	78	116	111	213	66	705	326	158	266
24	64	185	180	75	113	110	64	240	697	71	161	268
25	60	182	194	122	112	110	65	390	690	62	176	57
26	430	165	77	120	112	111	413	494	81	318	168	69
27	600	175	76	76	83	59	374	485	71	314	174	289
28	460	67	163	117	88	58	356	2170	281	313	61	284
29	280	64	170	117	---	106	335	245	277	322	59	477
30	205	170	183	65	---	106	323	135	278	322	164	578
31	65	---	188	71	---	105	---	540	---	64	163	---
TOTAL	7776	4243	4794	4250	3499	3521	5836	10987	18495	7561	5914	6623
MEAN	251	141	155	137	125	114	195	354	617	244	191	221
MAX	600	185	252	379	337	197	413	2170	1400	331	354	578
MIN	55	57	58	64	61	58	64	62	71	62	59	54
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135
MEAN‡	147	86	175	309	404	319	295	414	513	171	137	86
CFSM‡	.57	.33	.68	1.19	1.56	1.23	1.14	1.60	1.98	.66	.53	.33
IN‡	.65	.37	.78	1.38	1.62	1.42	1.27	1.84	2.21	.76	.61	.37

CAL YR 1981	TOTAL 65426	MEAN 179	MAX 600	MIN 55	MEAN‡ 136	CFSM‡ .53	IN‡ 7.13
WTR YR 1982	TOTAL 83499	MEAN 229	MAX 2170	MIN 54	MEAN‡ 254	CFSM‡ .98	IN‡ 13.32

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02073000 SMITH RIVER AT MARTINSVILLE, VA

LOCATION.--Lat 36°39'40", long 79°52'51", Henry County, Hydrologic Unit 03010103, on right bank at south edge of Martinsville, 800 ft (244 m) downstream from bridge on U.S. Highways 58 and 220, and 5.0 mi (8.0 km) downstream from Beaver Creek.

DRAINAGE AREA.--380 mi² (984 km²).

PERIOD OF RECORD.--August 1929 to current year.

REVISED RECORDS.--WSP 1032: 1933-35(M), 1936-39, 1940-41(P). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 657.22 ft (200.321 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 19.6 mi (31.5 km) upstream. Some additional regulation by powerplant 1,000 ft (305 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 452 ft³/s (12.80 m³/s), 16.15 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s (1,100 m³/s) Oct. 19, 1937, gage height, 21.50 ft (6.553 m), from rating curve extended above 17,000 ft³/s (480 m³/s) on basis of computations of flow over dam at gage heights 16.76 ft (5.108 m) and 21.50 ft (6.553 m); minimum, 3.8 ft³/s (0.11 m³/s) Mar. 19, 1955; minimum daily, 19 ft³/s (0.54 m³/s) Oct. 6, 1935; minimum gage height, 0.69 ft (0.210 m) Sept. 8, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,740 ft³/s (163 m³/s) May 28, gage height, 6.93 ft (2.112 m); minimum, 6.2 ft³/s (0.18 m³/s) Jan. 7, Sept. 17, gage height, 0.83 ft (0.253 m); minimum daily, 51 ft³/s (1.44 m³/s) Dec. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336	82	236	565	341	298	181	214	909	349	106	221
2	324	195	259	333	270	341	212	180	1420	344	305	214
3	210	217	233	612	806	559	126	540	1420	157	373	247
4	88	227	242	1070	661	384	188	651	1480	149	370	96
5	260	239	178	540	361	333	380	653	749	289	425	111
6	260	245	95	403	160	287	321	648	272	387	444	198
7	265	150	250	306	193	527	293	649	680	384	194	333
8	242	116	234	218	279	612	292	260	777	394	265	323
9	255	186	209	86	213	351	339	148	760	393	497	329
10	94	224	218	132	235	262	97	451	856	199	547	326
11	80	148	271	256	204	242	160	440	841	128	491	188
12	302	305	51	238	219	295	301	437	320	316	421	96
13	436	230	85	188	98	100	343	433	1490	447	399	228
14	426	175	315	199	137	164	299	436	1040	408	202	318
15	423	72	536	202	251	275	310	119	881	392	117	326
16	425	170	564	108	210	208	331	136	820	396	175	265
17	233	220	308	136	449	208	92	271	1130	181	223	307
18	92	222	332	205	537	211	175	316	1020	122	459	187
19	343	217	68	250	373	243	340	267	795	298	236	72
20	397	216	129	225	161	105	300	323	406	386	266	301
21	360	154	247	286	199	187	288	327	612	382	99	348
22	397	106	307	322	272	245	293	136	793	379	121	377
23	404	177	265	134	218	203	316	122	798	385	171	332
24	190	246	240	201	205	197	77	330	778	186	209	324
25	95	233	350	277	212	177	129	869	768	132	259	138
26	380	152	230	212	221	285	576	571	335	295	215	223
27	1120	300	203	171	94	123	634	641	143	369	271	390
28	498	144	334	195	213	121	526	1990	330	363	104	329
29	339	112	286	235	---	238	490	552	350	375	116	386
30	293	186	254	75	---	177	440	527	367	379	161	879
31	112	---	319	194	---	204	---	832	---	195	215	---
TOTAL	9679	5666	7848	8574	7792	8162	8849	14469	23340	9559	8456	8412
MEAN	312	189	253	277	278	263	295	467	778	308	273	280
MAX	1120	305	564	1070	806	612	634	1990	1490	447	547	879
MIN	80	72	51	75	94	100	77	119	143	122	99	72
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135
MEAN‡	208	134	273	449	557	468	395	527	674	235	219	145
CFSM‡	.55	.35	.72	1.18	1.47	1.23	1.04	1.39	1.77	.62	.58	.38
IN‡	.63	.39	.83	1.36	1.53	1.42	1.16	1.60	1.98	.71	.66	.43

CAL YR 1981 TOTAL 92234 MEAN 253 MAX 1120 MIN 50 MEAN‡ 210 CFSM‡ .55 IN‡ 7.50
WTR YR 1982 TOTAL 120806 MEAN 331 MAX 1990 MIN 51 MEAN‡ 356 CFSM‡ .94 IN‡ 12.72

* Change in contents, equivalent in cubic feet per second, in Philpot Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074000 SMITH RIVER AT EDEN, NC

LOCATION.--Lat 36°31'31", long 79°45'57", Rockingham County, Hydrologic Unit 03010103, on right bank at Eden, 0.3 mi (0.5 km) downstream from bridge on State Highway 14, 0.8 mi (1.3 km) upstream from bridge on Secondary Road 1714, 1.2 mi (1.9 km) south of Virginia-North Carolina State line, 1.3 mi (2.1 km) downstream from Stuart Creek, and 3.9 mi (6.3 km) upstream from mouth.

DRAINAGE AREA.--538 mi² (1,393 km²).

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970, published as "at Spray."

REVISED RECORDS.--WSP 1433: 1946.

GAGE.--Water-stage recorder. Datum of gage is 539.56 ft (164.458 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 40 mi (64 km) upstream, usable capacity, 6,325,000,000 ft³ (179.1 hm³). Some additional regulation by hydroelectric plant at Martinsville, Va., 18 mi (29 km) upstream. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--43 years, 617 ft³/s (17.47 m³/s), 15.57 in/yr (395 mm/yr), adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,600 ft³/s (1,290 m³/s) Aug. 15, 1940, gage height, 19.28 ft (5.877 m), from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of computation of peak flow over dam 1.5 mi (2.4 km) downstream; minimum, 38 ft³/s (1.08 m³/s) Aug. 7, 1967; minimum daily, 46 ft³/s (1.30 m³/s) Aug. 14, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,330 ft³/s (151 m³/s) May 28, gage height, 7.10 ft (2.164 m); minimum, 65 ft³/s (1.84 m³/s) Oct. 12, Sept. 19, gage height, 1.35 ft (0.411 m); minimum daily, 80 ft³/s (2.27 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	138	234	983	475	408	253	444	1020	404	143	236
2	315	176	288	606	411	577	263	226	1810	386	120	233
3	319	244	270	760	1400	1030	284	383	1790	399	376	221
4	108	238	267	2410	1610	723	295	753	1770	183	375	250
5	102	257	269	1250	721	547	313	753	1520	127	374	114
6	275	295	115	657	464	473	414	755	466	466	508	94
7	253	200	194	474	356	979	364	738	400	415	442	296
8	267	138	254	416	324	1310	377	669	940	423	118	307
9	247	180	246	240	337	656	407	200	920	446	557	326
10	253	241	237	216	333	484	355	268	988	411	515	315
11	100	190	233	329	294	421	240	500	1120	180	790	364
12	153	286	231	357	274	379	250	500	952	205	560	114
13	445	242	91	340	263	322	397	512	1510	471	457	88
14	429	231	229	284	224	271	382	495	1290	516	470	306
15	440	117	792	290	247	299	398	418	1160	447	150	316
16	438	149	1230	247	305	318	385	183	1050	436	117	313
17	377	238	573	207	634	307	336	186	1200	466	247	307
18	122	242	432	231	1150	296	240	299	1580	144	740	354
19	102	240	309	331	638	293	278	337	1130	138	326	80
20	421	244	169	337	457	320	378	342	1010	419	271	114
21	408	181	341	376	342	310	340	358	294	411	276	362
22	402	135	359	522	340	302	381	385	927	400	134	390
23	402	172	302	395	321	296	367	220	927	406	117	352
24	429	264	290	313	304	284	311	455	904	455	222	325
25	131	272	569	312	280	264	206	1220	885	148	266	327
26	161	195	456	293	269	384	450	703	895	127	258	157
27	1430	300	353	262	243	290	920	858	153	383	232	372
28	784	190	442	317	325	220	812	2390	241	378	268	445
29	517	144	360	272	---	243	636	897	398	376	133	363
30	284	190	327	242	---	263	561	985	409	390	95	1080
31	255	---	451	211	---	266	---	794	---	443	223	---
TOTAL	10695	6329	10913	14480	13341	13535	11593	18226	29659	10999	9880	8921
MEAN	345	211	352	467	476	437	386	588	989	355	319	297
MAX	1430	300	1230	2410	1610	1310	920	2390	1810	516	790	1080
MIN	100	117	91	207	224	220	206	183	153	127	95	80
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135

CAL YR 1981 TOTAL 112463 MEAN 308 MAX 1430 MIN 57 MEAN‡ 265 CFSM‡ .49 IN‡ 6.65
WTR YR 1982 TOTAL 158571 MEAN 434 MAX 2410 MIN 80 MEAN‡ 459 CFSM‡ .85 IN‡ 11.54

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074218 DAN RIVER NEAR MAYFIELD, NC

LOCATION.--Lat 36°32'29", long 79°36'21", Rockingham County, Hydrologic Unit 03010103, near right bank on downstream end of bridge pier on Secondary Road 1761, at North Carolina-Virginia State line, 2.2 mi (3.5 km) upstream from Whiteoak Creek, 3.0 mi (4.8 km) northwest of Mayfield, and at mile 81.0 (130.3 km).
DRAINAGE AREA.--1,778 mi² (4,605 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.
REVISED RECORDS.--WDR NC-81-1: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 458.4 ft (139.7 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).
REMARKS.--Records good except those below 500 ft³/s (14 m³/s), which are fair. Diurnal fluctuation and regulation at low flow caused by mills and Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) on the Dan River and Philpott Lake (station 02074000) on the Smith River. Duke Power Company gage-height and temperature telemeters at station.
AVERAGE DISCHARGE.--6 years, 2,077 ft³/s (58.82 m³/s), 15.86 in/yr (403 mm/yr), unadjusted.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,300 ft³/s (1,060 m³/s) Sept. 23, 1979, gage height, 27.31 ft (8.324 m); minimum, 197 ft³/s (5.58 m³/s) Aug. 25, 1981, gage height, 1.39 ft (0.424 m); minimum daily, 271 ft³/s (7.67 m³/s) Aug. 24, 31, 1981.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a stage of 28.1 ft (8.56 m), from floodmarks, discharge, 40,000 ft³/s (1,130 m³/s).
EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 13,000 ft³/s (370 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 5	0100	*14700	416	17.10	5.212	June 14	0530	13500	382	16.33	4.977
Feb. 4	0830	13900	394	16.55	5.044						

Minimum discharge, 351 ft³/s (9.94 m³/s) Oct. 13, gage height, 1.94 ft (0.591 m); minimum daily, 377 ft³/s (10.7 m³/s) Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	629	745	629	4010	1710	2600	1210	2260	4950	1710	955	667
2	633	698	746	4170	2170	2800	1160	1750	3600	1430	960	737
3	649	750	897	3270	5430	4200	1160	1700	3050	1300	957	728
4	537	749	844	9500	11700	3700	1220	2040	4910	986	962	738
5	415	756	826	10600	4720	2900	1370	1900	8360	1170	925	564
6	526	823	740	4060	2980	2300	1440	1780	4340	1210	1050	525
7	574	890	662	2690	2310	3500	1510	1670	2290	1290	1180	590
8	564	673	759	2160	1830	5200	1370	1710	2340	1240	768	685
9	558	637	730	1670	1660	4300	1390	1130	2160	1210	1820	684
10	535	675	696	1310	1660	2500	1490	1110	3160	1290	3060	688
11	377	698	686	990	1580	2000	1170	1280	9000	1200	1970	716
12	402	680	741	910	1420	1800	1130	1280	3600	1120	1790	523
13	638	741	556	1240	1370	1600	1310	1220	4290	1260	1370	511
14	743	693	611	1160	1430	1550	1300	1190	10000	1560	1180	583
15	709	636	1600	1050	1320	1500	1350	1210	4260	1390	815	723
16	727	568	5870	1160	1650	2000	1490	898	3050	1270	760	723
17	724	627	3090	1020	4040	1700	1390	863	2630	1330	756	710
18	452	658	1820	877	6170	1420	1090	933	5160	953	1280	707
19	423	672	1430	1130	3900	1360	1250	1100	3590	930	1170	523
20	635	665	881	1240	2760	1480	1360	1080	2590	1050	880	441
21	694	651	851	1390	2080	1750	1480	1040	1730	1150	843	655
22	666	551	1060	2310	1760	2010	1340	1170	2170	1070	617	750
23	726	564	1300	1910	1630	1640	1210	1020	2070	1120	668	928
24	801	655	1220	1670	1480	1430	1200	2010	1900	1380	646	829
25	582	777	1860	1610	1370	1340	938	3240	1850	1000	699	740
26	668	788	3650	1490	1310	1370	1060	2330	1820	920	766	598
27	3190	733	2590	1200	1350	1650	3050	2300	1410	962	765	987
28	5200	733	2020	1030	1500	1300	7710	3830	1580	1020	763	1060
29	1930	573	1770	1170	---	1180	4820	3380	1650	1300	588	863
30	1220	590	1530	1180	---	1250	2810	4820	1870	1360	587	1190
31	1010	---	1360	1080	---	1200	---	3070	---	1150	578	---
TOTAL	28137	20649	44025	70257	74290	66530	51778	56314	105380	37331	32128	21366
MEAN	908	688	1420	2266	2653	2146	1726	1817	3513	1204	1036	712
MAX	5200	890	5870	10600	11700	5200	7710	4820	10000	1710	3060	1190
MIN	377	551	556	877	1310	1180	938	863	1410	920	578	441
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135

CAL YR 1981 TOTAL 368767 MEAN 1010 MAX 5870 MIN 271 MEAN‡ 967 CFSM‡ .54 IN‡ 7.33
WTR YR 1982 TOTAL 608185 MEAN 1666 MAX 11700 MIN 377 MEAN‡ 1691 CFSM‡ .95 IN‡ 12.90

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-70, 1972-73, 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1976 to September 1982 (discontinued).
WATER TEMPERATURES: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder since October 1977. Water-quality monitor January 1981 to September 1982.

REMARKS.--Station is part of North Carolina district's Primary Accounting Network used to define stream-quality characteristics of the State's major streams. Water temperatures near left bank sometimes affected by heated releases from power plant located 8.4 mi (13.5 km) upstream. Releases from town of Eden's sewage treatment plant enter river on left bank approximately 10.2 mi (16.4 km) upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 282 micromhos Oct. 11, 1981; minimum daily, 37 micromhos Oct. 10, 1976.
WATER TEMPERATURES: Maximum, 33.5°C June 16, 1981; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 282 micromhos Oct. 11; minimum daily, 55 micromhos June 14.
WATER TEMPERATURES: Maximum, 31.5°C July 19; minimum, 0.0°C Dec. 21, Jan. 10, 11, 17, 18, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
DEC												
16...	1145	6800	80	7.2	4.0	120	12.5	17	1	4.1	1.6	6.4
JAN												
01...	0830	3720	80	7.2	2.5	80	--	18	2	4.5	1.7	5.8
02...	0130	5530	85	7.1	3.5	80	--	24	8	5.8	2.3	7.0
02...	1625	3470	80	7.2	4.5	75	--	16	0	4.6	1.7	4.9
04...	0825	5970	90	7.2	4.5	140	--	22	4	5.5	1.9	5.0
04...	1100	10400	70	7.2	4.5	160	--	16	1	3.8	1.5	3.7
05...	0200	14700	--	--	5.2	250	--	15	--	3.6	1.4	3.2
05...	1230	10200	65	7.4	5.5	200	--	18	5	4.5	1.7	4.3
06...	0830	4360	--	7.4	5.0	110	--	21	5	5.4	1.8	5.7
MAR												
16...	1300	1530	87	7.0	10.0	20	10.8	22	4	5.4	2.1	11
APR												
28...	0600	6650	70	6.9	15.0	200	--	14	1	3.3	1.3	4.5
28...	0940	7680	65	6.4	15.0	250	--	14	3	3.4	1.4	5.0
28...	1730	9880	50	6.2	15.0	210	--	14	7	3.3	1.4	3.5
29...	0530	5900	60	6.1	14.5	200	--	16	3	3.8	1.5	5.5
29...	1245	4240	65	6.2	15.0	190	--	16	5	3.9	1.6	6.3
JUN												
14...	1030	12600	52	6.2	18.0	360	8.6	13	5	3.1	1.2	2.4
SEP												
08...	1040	710	220	7.8	21.0	20	8.4	27	0	6.7	2.5	35

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE FET-FLD (MG/L AS HCO3)	CAR-BONATE FET-FLD (MG/L AS CO3)	ALKA-LINITY FIELD (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
DEC												
16...	42	.7	2.1	20	0	16	2.0	9.4	7.7	<.1	9.4	56
JAN												
01...	38	.6	1.7	20	0	16	2.2	8.8	6.0	<.1	12	66
02...	37	.7	1.7	20	0	16	3.1	8.9	6.2	<.1	12	57
02...	34	.5	1.7	22	0	18	1.8	9.6	5.0	<.1	12	56
04...	31	.5	2.0	22	0	18	1.8	12	4.8	<.1	11	58
04...	31	.4	1.8	16	0	15	2.2	10	4.0	<.1	9.1	46
05...	29	.4	2.0	--	--	--	--	9.4	3.0	<.1	10	--
05...	31	.5	2.2	16	0	13	.9	11	3.7	<.1	12	68
06...	34	.6	2.1	20	0	16	1.3	14	6.0	<.1	10	53
MAR												
16...	50	1.1	1.5	22	0	18	4.7	7.7	9.7	<.1	15	69
APR												
28...	39	.6	1.5	16	0	13	2.9	7.0	5.0	<.1	9.4	50
28...	40	.6	1.8	13	0	11	9.3	7.0	4.5	.1	9.7	44
28...	32	.4	1.5	9	0	7	12	10	3.2	<.1	9.8	37
29...	40	.7	1.7	16	0	13	19	9.0	5.5	<.1	10	--
29...	43	.7	1.7	14	0	11	16	9.0	6.4	<.1	10	50
JUN												
14...	25	.3	2.2	10	0	8	11	8.0	2.1	<.1	8.2	50
SEP												
08...	72	3.2	2.0	56	0	46	1.0	15	40	.1	14	140

< Actual value is known to be less than the value shown.

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)
DEC												
16...	52	.09	1210	.30	.030	.33	.29	.100	.070	.09	--	.60
JAN												
01...	51	.09	663	.28	.080	.36	.43	.080	.050	.06	.54	.52
02...	56	.08	851	.27	.020	.29	.27	.050	.030	.04	.62	.39
02...	49	.08	525	.28	.010	.29	.25	.040	<.010	.01	.35	--
04...	51	.08	935	.39	.070	.46	.37	.170	.090	.12	1.3	.38
04...	45	.06	1290	.33	.110	.44	.32	.240	.060	.08	.86	.62
05...	38	--	--	.30	.100	.40	.27	.190	.080	.10	.57	.36
05...	47	.09	1670	.33	.070	.40	.27	.140	.060	.08	.53	.58
06...	55	.07	624	.31	.030	.34	--	.090	.070	.09	.91	.53
MAR												
16...	67	.09	285	--	<.010	.26	.26	.030	.030	.04	.48	.07
APR												
28...	39	.07	898	.35	.100	.45	--	--	--	--	--	--
28...	40	.06	912	.31	.090	.40	--	--	--	--	--	--
28...	39	.05	987	.32	.090	.41	--	--	--	--	--	--
29...	44	--	--	.30	.050	.35	--	--	--	--	--	--
29...	47	.07	572	.29	.050	.34	--	--	--	--	--	--
JUN												
14...	33	.07	1700	.41	.190	.60	.26	.400	.030	.04	1.5	.27
SEP												
08...	135	.19	268	.66	.040	.70	.64	.100	.070	.09	4.0	.83

< Actual value is known to be less than the value shown.

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	NITROGEN DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS TOTAL (MG/L AS PO4)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
DEC												
16...	--	--	.67	--	--	.96	.270	.83	.020	.040	<.010	--
JAN												
01...	.62	.05	.57	.98	4.3	1.0	.230	.71	.060	.070	.040	.12
02...	.67	.25	.42	.96	4.3	.69	.170	.52	.020	.060	.030	.09
02...	.39	.14	.25	.68	3.0	.50	.050	.15	<.010	.030	.010	.03
04...	1.50	1.0	.47	2.0	8.7	.84	.430	1.3	.050	.140	.040	.12
04...	1.10	.42	.68	1.5	6.8	1.0	.620	1.9	.040	.200	.030	.09
05...	.76	.32	.44	1.2	5.1	.71	.190	.58	.020	.130	.020	.06
05...	.67	.03	.64	1.1	4.7	.91	.400	1.2	.020	.100	<.010	--
06...	1.00	.40	.60	1.3	5.9	--	.180	.55	.050	.070	.050	.15
MAR												
16...	.51	.41	.10	.77	3.4	.36	.100	.31	.070	.070	.060	.18
APR												
28...	2.20	--	--	2.7	12	--	.630	1.9	--	.140	--	--
28...	.70	--	--	1.1	4.9	--	.320	.98	--	.120	--	--
28...	1.30	--	--	1.7	7.6	--	.610	1.9	--	.130	--	--
29...	.88	--	--	1.2	5.4	--	.210	.64	--	.070	--	--
29...	1.10	--	--	1.4	6.4	--	.390	1.2	--	.070	--	--
JUN												
14...	1.90	1.6	.30	2.5	11	.56	.640	2.0	.030	.310	.020	.06
SEP												
03...	4.10	3.2	.90	4.8	21	1.5	.270	.83	.300	.280	.290	.89

< Actual value is known to be less than the value shown.

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUSPENDED TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
DEC											
16...	1	0	1	<1	--	2	--	--	--	--	--
JAN											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
05...	1	0	1	1	0	1	40	<1	17	<1	39
05...	1	1	0	1	0	3	20	<1	12	<1	21
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	1	--	<1	<1	--	<1	--	--	--	--	--
APR											
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
14...	1	0	1	1	--	<1	10	<1	15	<1	44
SEP											
08...	1	0	1	1	0	1	--	--	--	--	--

< Actual value is known to be less than the value shown.

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
DEC											
16...	--	--	--	--	--	17	--	<1	--	--	--
JAN											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
05...	32	7	30000	29000	720	24	--	<1	900	840	63
05...	12	9	18000	17000	790	22	--	<1	500	430	75
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
16...	--	--	--	--	--	2	--	<1	--	--	--
APR											
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
14...	39	5	44000	44000	420	26	23	3	800	790	12
SEP											
08...	--	--	--	--	--	4	2	2	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
DEC											
16...	.1	.0	.1	<1	<1	--	--	--	4.3	1.7	.00
JAN											
05...	.2	.0	.2	1	<1	80	70	10	--	--	--
05...	.2	.0	.2	1	<1	50	30	18	--	--	--
MAR											
16...	.2	.0	.2	<1	<1	--	--	--	1.7	.2	--
JUN											
14...	.2	.0	.2	<1	<1	90	80	10	15	>7.0	--
SEP											
08...	<.1	--	<.1	<1	<1	--	--	--	2.4	.1	--

< Actual value is known to be less than the value shown.
> Actual value is known to be greater than the value shown.

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	110	120	98	108	105	90	90	70	70	106	240
2	192	108	106	71	104	89	121	80	80	92	99	192
3	180	146	159	85	98	90	102	80	88	112	118	175
4	160	148	135	68	62	82	114	110	82	91	140	188
5	172	160	139	57	66	91	145	110	91	60	140	92
6	135	155	130	75	76	89	154	122	79	102	142	132
7	175	150	165	86	74	68	94	123	82	78	115	105
8	210	130	130	82	98	92	112	107	129	78	158	198
9	190	160	115	87	74	75	108	90	80	86	142	140
10	245	170	131	74	87	57	145	83	145	78	81	182
11	282	140	170	85	95	91	83	141	74	66	155	162
12	142	150	170	200	102	112	125	185	86	70	70	185
13	268	233	121	105	102	93	98	130	65	95	98	118
14	172	150	120	118	95	92	90	135	55	100	115	105
15	155	165	235	120	117	100	89	130	69	108	120	165
16	168	195	71	125	100	105	117	103	90	103	102	168
17	160	138	74	100	87	126	116	130	125	100	245	162
18	158	168	109	88	82	101	78	141	65	100	190	160
19	140	180	130	103	80	114	100	142	102	100	155	185
20	125	180	82	100	87	100	106	115	120	225	172	195
21	155	180	109	106	80	83	116	138	80	140	152	106
22	158	160	175	120	88	98	100	109	145	130	125	108
23	195	130	108	100	106	120	142	104	68	120	102	107
24	142	140	95	85	92	90	133	85	99	120	205	108
25	148	140	83	82	100	83	127	142	111	100	178	135
26	100	140	78	115	115	95	124	88	58	81	172	138
27	125	125	75	98	105	111	105	78	58	150	160	102
28	60	175	79	112	108	118	56	85	71	126	180	105
29	71	102	88	122	---	67	67	73	170	140	148	122
30	80	132	95	109	---	96	80	70	82	104	105	155
31	110	---	101	103	---	115	---	80	---	143	165	---
MEAN	160	153	119	99	92	97	108	110	91	105	140	148

WTR YR 1982 MEAN 119 MAX 282 MIN 55

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.5	18.0	19.5	---	---	14.0	8.5	7.0	8.0	3.5	2.5	3.0
2	21.5	18.0	20.0	---	---	16.0	9.0	7.5	8.0	4.0	3.5	4.0
3	18.0	15.0	16.5	16.5	15.5	16.0	9.0	7.5	8.5	5.0	4.0	4.5
4	17.0	14.5	16.0	16.5	15.0	15.0	8.5	8.0	8.0	5.0	4.0	4.5
5	19.0	15.0	16.5	17.0	15.5	16.0	8.5	7.0	7.5	5.5	5.0	5.5
6	20.5	18.5	19.5	17.0	14.5	16.0	7.0	5.5	6.0	5.5	5.5	5.5
7	20.5	18.5	20.0	14.5	12.5	13.5	7.0	5.0	6.0	6.5	5.0	5.5
8	19.5	17.0	18.0	12.5	10.5	11.5	7.0	6.0	6.5	6.5	5.5	6.0
9	18.5	17.0	17.5	14.5	10.5	12.0	7.0	5.5	6.5	5.5	3.5	5.0
10	17.0	15.0	15.5	14.5	11.5	13.0	5.5	4.0	5.0	3.5	.0	1.5
11	16.5	15.0	16.0	12.5	11.0	11.5	4.5	3.5	4.0	3.0	.0	.5
12	17.0	15.0	16.0	12.0	11.0	11.5	4.5	2.5	3.5	4.5	2.0	3.0
13	17.0	14.5	15.5	11.0	9.0	10.0	5.0	3.0	4.0	2.0	1.0	1.5
14	17.5	14.0	15.0	10.0	8.5	9.5	6.0	3.5	4.0	2.0	1.0	1.5
15	18.0	15.5	16.0	9.0	7.5	8.5	6.0	3.0	4.5	3.0	.5	1.5
16	18.0	15.5	16.5	10.0	7.5	8.5	4.5	3.5	4.0	2.5	1.5	2.0
17	17.5	15.0	15.0	11.5	9.5	10.0	5.0	4.0	4.5	1.5	.0	.5
18	17.0	15.5	16.0	12.5	11.0	11.5	4.5	4.0	4.5	4.0	.0	2.0
19	16.0	14.5	15.5	12.5	10.0	11.0	4.0	3.5	3.5	3.5	1.0	1.5
20	15.5	13.0	14.0	13.5	11.5	12.5	3.5	3.5	3.5	2.0	1.0	1.5
21	14.5	11.5	13.0	11.5	8.5	10.5	3.5	.0	2.5	2.0	1.0	1.5
22	15.0	12.5	14.0	8.5	6.5	7.5	3.0	1.0	1.5	3.0	.0	1.5
23	15.5	14.5	15.0	9.0	5.5	7.0	2.0	1.0	1.5	3.0	1.0	1.5
24	14.5	12.5	13.5	9.0	7.0	8.0	4.0	2.0	3.0	2.5	1.0	1.5
25	12.5	11.5	12.0	8.5	6.5	7.5	4.0	3.5	4.0	3.0	1.5	2.0
26	14.0	11.5	12.5	8.0	5.5	6.5	4.5	3.5	4.0	2.5	1.0	1.5
27	14.5	13.0	14.0	8.0	6.0	8.0	4.5	4.0	4.5	2.5	.5	1.5
28	---	---	13.5	9.0	8.0	8.5	6.0	4.5	5.0	3.0	1.0	2.0
29	---	---	14.0	8.5	7.0	8.0	6.0	5.5	5.5	3.0	1.0	2.0
30	---	---	15.5	8.5	6.0	7.0	5.5	4.5	5.0	2.5	1.0	2.0
31	---	---	14.0	---	---	---	4.5	3.5	4.0	5.0	2.0	3.5
MONTH	21.5	11.5	15.5	17.0	5.5	11.0	9.0	.0	5.0	6.5	.0	2.5

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.0	5.0	5.5	5.5	3.5	4.5	14.5	12.0	13.0	16.0	14.0	15.0
2	5.5	4.0	4.5	7.0	5.0	6.0	15.5	13.0	14.0	16.5	15.5	16.0
3	4.0	3.5	4.0	7.5	7.0	7.0	16.0	15.0	15.5	18.0	16.0	17.0
4	6.0	4.0	5.0	7.0	6.0	6.5	15.5	13.5	14.5	18.0	16.5	17.5
5	6.5	6.0	6.5	8.0	6.0	6.5	---	---	13.5	18.0	16.0	17.0
6	6.5	6.0	6.5	8.0	8.0	8.0	---	---	12.0	18.5	16.5	17.5
7	6.0	5.0	5.5	8.0	6.5	7.5	---	---	11.0	19.0	17.5	18.5
8	5.5	4.0	5.0	6.5	5.5	6.0	11.0	9.0	10.0	19.0	18.0	18.5
9	5.5	5.0	5.0	7.5	5.5	6.5	10.0	8.0	9.0	20.0	17.0	18.0
10	5.5	5.0	5.0	8.5	7.0	7.5	11.0	8.5	9.5	21.0	17.5	19.0
11	5.0	5.0	5.0	10.0	8.0	9.0	12.0	9.5	10.5	21.0	18.5	20.0
12	6.0	5.0	5.5	11.5	9.5	10.5	14.0	11.0	12.0	22.0	19.0	20.5
13	6.0	5.0	5.5	12.0	11.5	11.5	15.0	13.5	14.0	22.5	20.5	21.5
14	6.0	4.5	5.0	12.0	11.0	11.5	16.0	14.0	15.0	23.0	21.5	22.5
15	6.5	5.5	6.0	12.0	11.0	11.5	17.0	15.5	16.0	24.0	22.0	23.0
16	8.0	6.5	7.0	11.0	10.0	10.0	17.0	15.5	16.5	25.0	22.5	23.5
17	9.0	8.0	8.5	13.0	9.0	11.0	18.0	17.0	17.5	26.5	21.0	25.0
18	8.5	7.0	7.5	14.0	12.0	13.0	19.0	16.5	18.0	26.5	24.0	25.5
19	7.0	6.0	6.5	13.5	13.0	13.5	17.5	16.0	17.0	26.5	24.0	24.5
20	7.5	6.0	6.5	13.0	12.0	12.5	16.0	15.0	15.5	24.5	23.5	24.0
21	8.5	7.5	8.0	12.0	11.5	12.0	15.0	15.0	15.0	24.5	21.0	23.5
22	9.0	7.5	8.5	13.0	11.5	12.0	15.0	13.0	14.0	24.0	22.0	23.0
23	9.0	7.0	8.0	13.5	12.0	12.5	14.0	11.5	12.5	24.0	22.5	23.0
24	10.0	8.0	9.0	12.5	12.0	12.5	15.5	12.0	13.5	24.0	22.5	23.0
25	10.5	9.5	10.0	13.5	11.0	12.0	15.0	13.0	14.0	24.0	22.5	23.0
26	9.5	7.5	8.5	13.5	12.0	13.0	17.5	14.5	15.5	23.5	22.5	22.5
27	7.5	3.5	5.0	12.0	10.5	11.5	17.0	15.5	16.5	22.5	21.5	22.0
28	4.0	2.5	3.5	10.5	9.0	9.5	16.5	14.5	15.5	22.0	17.0	20.5
29	---	---	---	10.5	8.0	9.0	15.5	14.5	15.0	21.0	20.5	21.0
30	---	---	---	12.0	9.0	10.5	15.5	14.0	15.0	21.0	20.0	20.5
31	---	---	---	13.0	11.5	12.5	---	---	---	24.0	21.0	22.5
MONTH	10.5	2.5	6.5	14.0	3.5	10.0	19.0	8.0	14.0	26.5	14.0	21.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.0	22.0	23.0	26.0	24.5	25.5	26.0	23.0	24.5	23.0	22.0	22.5
2	22.5	20.0	21.0	26.0	24.0	25.0	28.5	25.0	26.0	26.5	22.5	24.0
3	20.0	18.0	18.5	26.0	25.0	25.5	28.5	27.5	28.0	28.0	26.0	27.0
4	19.5	16.5	18.0	27.0	25.0	26.0	28.5	26.5	27.5	27.5	25.0	26.5
5	20.0	19.0	19.5	27.0	24.5	25.5	29.0	27.5	28.0	25.0	22.0	23.0
6	20.5	20.0	20.0	26.5	25.5	26.0	27.5	26.0	26.5	24.0	20.5	22.0
7	21.5	19.0	20.0	27.5	26.0	27.0	26.5	25.5	26.0	24.0	20.5	22.5
8	22.5	21.0	21.5	27.5	25.5	26.5	28.0	25.5	26.5	23.0	21.0	22.0
9	22.5	20.5	21.5	27.0	26.0	26.5	28.0	25.5	27.0	23.0	21.0	22.0
10	22.0	21.0	21.5	27.0	26.0	26.5	26.0	24.5	25.0	22.5	21.0	21.5
11	21.0	19.5	20.0	27.0	26.5	26.5	26.0	24.0	25.0	21.5	20.0	21.0
12	20.0	19.5	19.5	29.0	25.5	27.0	24.5	23.5	24.0	23.0	19.5	21.0
13	20.5	19.5	20.0	29.0	27.5	28.0	24.5	23.0	23.5	24.5	21.5	22.5
14	20.0	19.5	19.5	27.5	26.0	26.5	24.0	22.5	23.5	25.0	24.5	25.0
15	21.0	20.0	20.5	27.0	26.0	26.5	26.0	22.5	24.0	26.0	24.5	25.0
16	22.0	20.5	21.0	27.5	26.0	27.0	27.5	24.5	26.0	27.0	25.0	25.5
17	22.0	21.5	22.0	27.5	26.0	27.0	27.5	26.5	27.0	26.0	25.0	25.5
18	22.0	19.5	20.5	30.0	26.5	28.0	27.0	24.5	25.5	25.0	23.0	24.0
19	21.0	19.5	20.5	31.5	28.5	29.5	26.0	23.5	24.5	23.0	22.0	22.5
20	22.0	20.5	21.5	31.0	29.0	29.5	27.0	24.5	26.0	23.0	22.0	22.5
21	25.0	22.0	23.0	30.0	27.5	29.0	27.0	25.0	26.0	22.5	20.5	21.0
22	25.0	22.5	23.5	30.0	27.5	28.5	25.5	23.0	24.5	20.5	19.5	20.0
23	22.5	20.5	21.5	28.0	27.5	28.0	27.0	23.5	25.0	19.5	17.5	18.5
24	22.0	20.5	21.0	27.5	26.0	26.5	28.0	26.5	27.0	18.5	16.5	17.5
25	21.0	20.0	20.5	28.0	25.5	26.5	29.5	28.0	28.5	18.5	16.5	17.5
26	22.0	20.5	21.0	31.0	27.0	28.5	29.0	26.0	27.0	18.0	17.0	17.5
27	24.5	21.5	23.0	31.0	29.0	29.5	27.0	25.0	26.0	18.0	16.5	17.0
28	25.5	23.5	24.5	30.0	28.0	29.0	26.0	24.5	25.5	19.0	17.5	18.0
29	26.0	24.5	25.5	30.0	27.0	28.5	26.0	23.0	24.0	19.0	18.0	18.5
30	26.5	25.0	26.0	27.0	26.0	26.5	23.5	21.0	22.0	18.5	17.0	18.0
31	---	---	---	26.5	24.0	25.5	23.5	22.0	22.5	---	---	---
MONTH	26.5	16.5	21.5	31.5	24.0	27.0	29.5	21.0	25.5	28.0	16.5	21.5
YEAR	31.5	.0	15.0									

ROANOKE RIVER BASIN

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC					
16...	1145	6800	591	10900	49
JUN					
14...	1030	12600	1840	62600	51
SEP					
08...	1040	710	52	100	--

PHYTOPLANKTON ANALYSIS, DECEMBER 1981

DATE	DEC 16,81
TIME	1145
TOTAL CELLS/ML	3800
DIVERSITY: DIVISION	0.2
.CLASS	0.2
..ORDER	1.9
...FAMILY	2.3
....GENUS	2.8

ORGANISM	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)		
.BACILLARIOPHYCEAE		
..BACILLARIALES		
...NITZSCHIACEAE		
....NITZSCHIA	1000#	26
..EUPODISCALES		
...COSCINODISCACEAE		
....CYCLOTELLA	87	2
....MELOSIRA	300	8
..FRAGILARIALES		
...FRAGILARIACEAE		
....DIATOMA	43	1
....SYNEDRA	560	15
..NAVICULALES		
...CYMBELLACEAE		
....CYMBELLA	300	8
...GOMPHONEMACEAE		
....GOMPHONEMA	87	2
...NAVICULACEAE		
....GYROSIGMA	87	2
....NAVICULA	1100#	30
....PINNULARIA	130	3
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	87	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 PERCENT
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 PERCENT

02074500 SANDY RIVER NEAR DANVILLE, VA

LOCATION.--Lat 36°37'10", long 79°30'16", Pittsylvania County, Hydrologic Unit 03010103, on right bank 200 ft (61 m) downstream from Hickory Forest Creek, 400 ft (122 m) upstream from bridge on State Highway 863 between Callahans Store and Mount Cross, 5.5 mi (8.8 km) northwest of western corporate limits of Danville, and 5.8 mi (9.3 km) upstream from mouth.

DRAINAGE AREA.--112 mi^2 (290 km^2).

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1930-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 460.38 ft (140.324 m) National Geodetic Vertical Datum of 1929. Prior to June 26, 1942, at site 1,200 ft (366 m) downstream at datum 5.57 ft (1.698 m) lower.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by small mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 106 ft^3/s (3.002 m^3/s), 12.85 in/yr (326 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft^3/s (651 m^3/s) Aug. 14, 1940, gage height, 14.8 ft (4.51 m), present datum, from floodmarks, from rating curve extended above 11,000 ft^3/s (310 m^3/s); minimum, 3 ft^3/s (0.08 m^3/s) Sept. 29, 1930, gage height, 0.40 ft (0.122 m), site and datum then in use; minimum daily, 8 ft^3/s (0.23 m^3/s) Aug. 29, 31, Sept. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s (42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1130	*2200	62.3	5.14	1.567	June 10	2100	1550	43.9	4.48	1.366
Feb. 3	1200	1580	44.7	4.51	1.375						

Minimum discharge, 22 ft^3/s (0.62 m^3/s) Dec. 13, gage height, 1.03 ft (0.314 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	37	36	245	167	131	74	63	276	53	40	35
2	26	37	43	156	116	196	72	61	172	50	36	33
3	25	36	39	198	981	316	78	61	186	48	34	31
4	25	36	40	1290	488	218	76	58	196	50	32	29
5	26	37	42	376	202	162	69	55	620	61	33	28
6	26	45	37	176	148	152	76	55	169	55	36	28
7	24	38	37	133	116	595	69	53	107	48	32	28
8	23	35	37	105	103	510	69	53	87	47	33	27
9	24	35	35	92	99	209	83	53	79	45	90	26
10	25	35	33	77	92	155	78	50	324	52	60	28
11	26	35	35	70	83	133	72	48	341	48	53	29
12	26	34	38	67	79	119	71	47	131	50	55	29
13	26	34	40	64	88	110	69	45	412	145	42	27
14	26	34	43	63	85	101	68	44	243	81	39	27
15	26	34	180	60	79	99	71	42	131	56	38	30
16	27	34	327	61	94	96	68	47	101	50	36	28
17	26	35	121	62	215	94	69	44	124	45	35	27
18	28	34	81	66	257	87	68	41	282	42	196	26
19	29	34	66	73	174	87	64	44	119	40	71	26
20	28	34	60	79	140	99	66	48	88	40	47	28
21	27	33	53	107	119	101	68	44	105	39	40	32
22	29	32	73	124	101	90	63	42	79	38	38	33
23	31	32	76	103	90	83	61	44	76	42	37	34
24	36	44	65	99	87	81	60	288	68	45	33	30
25	35	47	175	92	81	79	60	430	66	41	38	30
26	53	38	223	85	76	94	76	112	64	38	35	61
27	217	37	133	80	87	81	96	81	61	36	32	94
28	114	36	95	71	124	76	83	71	60	36	32	45
29	54	35	76	71	---	76	69	68	60	45	30	37
30	44	34	65	77	---	76	66	181	61	38	29	36
31	39	---	79	87	---	76	---	376	---	40	31	---
TOTAL	1196	1081	2483	4511	4571	4582	2132	2749	4888	1544	1413	1002
MEAN	38.6	36.0	80.1	146	163	148	71.1	88.7	163	49.8	45.6	33.4
MAX	217	47	327	1290	981	595	96	430	620	145	196	94
MIN	23	32	33	60	76	76	60	41	60	36	29	26
CFSM	.35	.32	.72	1.30	1.46	1.32	.64	.79	1.46	.45	.41	.30
IN.	.40	.36	.82	1.50	1.52	1.52	.71	.91	1.62	.51	.47	.33

CAL YR 1981 TOTAL 20537 MEAN 56.3 MAX 611 MIN 12 CFSM .50 IN 6.82
WTR YR 1982 TOTAL 32152 MEAN 88.1 MAX 1290 MIN 23 CFSM .79 IN 10.68

02075000 DAN RIVER AT DANVILLE, VA

LOCATION.--Lat 36°35'15", long 79°22'55", Danville City, Hydrologic Unit 03010104, on left bank 50 ft (20 m) downstream from Southern Railway bridge, 1,000 ft (300 m) upstream from Fall Creek, and at mile 62.7 (100.9 km).

DRAINAGE AREA.--2,050 mi² (5,310 km²), approximately.

PERIOD OF RECORD.--August 1934 to current year. Gage-height records collected in this vicinity 1890-1934, at same site 1934-49, and at Main Street Bridge, 0.25 mi (0.40 km) upstream 1949-68, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936.

GAGE.--Water-stage recorder. Datum of gage is 379.29 ft (115.608 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills above station. Since August 1950, flow regulated by Philpott Lake (station 02071900) 74.7 mi (120.2 km) upstream. Gage-height telemeters at station. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--48 years, 2,314 ft³/s (65.53 m³/s), 15.33 in/yr (389 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,000 ft³/s (2,120 m³/s) Aug. 15, 1940, gage height, 20.96 ft (6.389 m); maximum gage height, 21.34 ft (6.504 m) June 22, 1972, backwater from debris; minimum discharge, 11 ft³/s (0.31 m³/s) Sept. 5, 1966, gage height, 1.18 ft (0.360 m); minimum daily, 110 ft³/s (3.12 m³/s) Sept. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,400 ft³/s (408 m³/s) Jan. 5, gage height, 9.21 ft (2.807 m); minimum, 98 ft³/s (2.78 m³/s) Sept. 7, gage height, 1.51 ft (0.460 m); minimum daily, 342 ft³/s (9.69 m³/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	638	871	650	3790	1810	2980	1440	2580	5340	2080	1230	634
2	639	754	741	4500	2470	3900	1390	2080	4190	1730	1280	710
3	629	771	905	3570	5860	5210	1420	1900	3690	1510	927	727
4	613	798	918	9230	12600	4580	1340	2150	5070	1320	1170	667
5	462	789	874	11800	5980	3470	1620	2110	9480	1420	1050	659
6	469	816	818	4810	3690	2930	1620	1980	6100	1310	1150	634
7	553	930	695	3050	2690	4660	1670	1880	3110	1460	1320	342
8	547	771	752	2380	2260	7810	1630	1860	2630	1450	1110	659
9	545	693	748	1900	1960	4610	1650	1520	2730	1450	1620	650
10	541	693	712	1430	1890	3260	1740	1340	4210	1480	4230	659
11	480	727	703	1070	1840	2730	1470	1420	11100	1510	2830	659
12	376	684	728	1070	1660	2390	1380	1460	5030	1380	2760	650
13	488	798	642	1440	1630	2150	1470	1420	3950	1480	1550	496
14	691	727	626	1290	1650	1870	1490	1370	11400	1930	1230	440
15	663	701	1470	1150	1610	1820	1510	1380	5610	1610	991	693
16	674	626	5360	1210	1800	1840	1670	1160	4010	1480	798	693
17	671	642	3700	1140	4550	2210	1630	1080	3370	1470	718	676
18	563	701	2010	1150	6790	1720	1370	1060	5490	1300	1260	659
19	448	710	1520	1180	4870	1630	1440	1200	4970	1070	1480	659
20	436	710	1010	1340	3500	1750	1530	1300	3540	1060	930	419
21	635	693	808	1550	2580	1930	1650	1270	2830	1300	798	503
22	606	618	976	2470	2180	2370	1560	1310	2540	1220	701	718
23	669	610	1360	2240	1980	2000	1400	1450	2560	1240	650	871
24	725	693	1290	1960	1780	1710	1370	1980	2340	1580	594	871
25	697	807	2070	1900	1650	1610	1150	3850	2210	1320	676	718
26	750	844	3850	1720	1560	1620	1280	3130	2160	1110	727	754
27	2120	771	2900	1400	1640	1900	2880	2350	1760	975	771	1080
28	5790	807	2190	1160	2040	1580	6830	3780	1900	1240	754	1090
29	2320	650	1900	1310	---	1470	5930	4020	1920	1470	659	981
30	1380	626	1610	1340	---	1480	3350	4790	2100	1710	571	975
31	1080	---	1510	1280	---	1450	---	4240	---	1360	518	---
TOTAL	27897	22031	46046	76830	86520	82640	57880	64420	127340	44025	37053	20946
MEAN	900	734	1485	2478	3090	2666	1929	2078	4245	1420	1195	698
MAX	5790	930	5360	11800	12600	7810	6830	4790	11400	2080	4230	1090
MIN	376	610	626	1070	1560	1450	1150	1060	1760	975	518	342
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135

CAL YR 1981 TOTAL 403219 MEAN 1105 MAX 5790 MIN 294 MEAN‡ 10.62 CFSM‡ .52 IN‡ 7.04
WTR YR 1982 TOTAL 693629 MEAN 1900 MAX 12600 MIN 342 MEAN‡ 19.25 CFSM‡ .94 IN‡ 12.75

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02075500 DAN RIVER AT PACES, VA

LOCATION.--Lat 36°38'32", long 79°05'23", Halifax County, Hydrologic Unit 03010104, on right bank 100 ft (30 m) upstream from bridge on State Highway 658, 0.5 mi (0.8 km) southeast of Paces, 0.5 mi (0.8 km) upstream from Big Toby Creek, 2.7 mi (4.3 km) upstream from Birch Creek, and at mile 36.0 (57.9 km).

DRAINAGE AREA.--2,550 mi^2 (6,600 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 322.48 ft (98.292 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills at Danville. Since August 1950, flow regulated by Philpott Lake (station 02071900) 101.4 mi (163.2 km) upstream. Gage height telemeters at station.

AVERAGE DISCHARGE.--31 years (water years 1952-82), 2,699 ft^3/s (76.44 m^3/s), 14.37 in/yr (365 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,800 ft^3/s (1,840 m^3/s) June 23, 1972, gage height, 33.15 ft (10.104 m), from rating curve extended above 32,000 ft^3/s (910 m^3/s); minimum, 193 ft^3/s (5.47 m^3/s) Sept. 4, 1956, gage height, 1.71 ft (0.521 m); minimum daily, 244 ft^3/s (6.91 m^3/s) Sept. 4, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 32.3 ft (9.85 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,500 ft^3/s (496 m^3/s) Jan. 5, gage height, 19.36 ft (5.901 m); minimum, 273 ft^3/s (7.73 m^3/s) Sept. 7-8, gage height, 1.90 ft (0.579 m); minimum daily, 489 ft^3/s (13.8 m^3/s) Oct. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	725	1290	773	4930	2440	4320	1750	3080	4770	2230	1410	706
2	743	1100	856	6950	3060	5290	1730	2580	5140	1910	1350	846
3	730	1020	1030	5520	8520	6450	1700	2180	3860	1670	1020	944
4	733	1060	1210	9850	15200	6130	1700	2240	5040	1580	1280	911
5	666	1050	1180	17000	13100	4600	1760	2430	8860	1430	963	902
6	538	1060	1120	11200	5480	3910	1880	2260	8700	1450	1240	844
7	598	1130	978	4760	3830	4800	1930	2170	4740	1480	1050	626
8	653	1160	874	3540	3180	9850	1980	2080	3010	1560	1330	582
9	643	912	975	2430	2660	7500	1950	2060	3320	1630	1520	800
10	644	882	933	2320	2520	4550	2030	1570	3260	1770	3940	810
11	636	917	877	1710	2450	3630	2010	1530	13800	1650	3570	834
12	529	936	860	1340	2250	3210	1700	1660	9860	2000	6110	876
13	489	910	901	1730	2210	2820	1630	1650	5470	2050	4950	699
14	693	974	753	1890	2250	2560	1790	1580	10800	2990	2260	612
15	830	915	1310	1790	2250	2360	1790	1550	8620	2080	1680	604
16	797	853	5520	1630	2350	2270	1880	1540	4640	1740	1180	883
17	810	787	6530	1690	5490	2550	1960	1300	3610	1560	1090	898
18	805	846	3400	1470	9190	2350	1970	1180	4580	1580	1320	846
19	601	866	2370	1480	7470	2080	1700	1270	5730	1180	1950	861
20	557	882	1850	1810	4900	2190	1780	1450	3840	1130	1420	718
21	672	858	1230	2100	3710	2380	1970	1550	3090	1230	1140	562
22	760	827	1190	3230	3010	2850	2040	1450	2300	1340	1070	711
23	840	712	1680	3580	2610	2580	1830	1750	2630	1590	843	905
24	920	789	1890	3150	2380	2250	1690	2300	2460	1690	844	1130
25	935	998	2970	3020	2200	2070	1640	3530	2280	1670	805	1010
26	1080	1060	5710	2620	2030	2040	1520	3630	2230	1250	902	956
27	1980	1030	5270	2180	2090	2130	2160	2480	2170	1080	974	1150
28	3700	973	3540	1800	2670	2140	5140	3110	1820	1180	1060	1420
29	7200	950	2840	1780	---	1850	7610	4320	1900	1990	1020	1360
30	3300	759	2400	1900	---	1750	4180	4200	2020	1880	795	1110
31	1650	---	2210	1970	---	1800	---	5620	---	1630	742	---
TOTAL	36457	28506	65230	112870	121500	107360	66400	71300	144550	51200	50828	26116
MEAN	1176	950	2104	3641	4339	3463	2213	2300	4818	1652	1640	871
MAX	7200	1290	6530	17000	15200	9850	7610	5620	13800	2990	6110	1420
MIN	489	712	753	1340	2030	1750	1520	1180	1820	1080	742	562
(*)	-104	-55	+20	+172	+279	+205	+100	+60	-104	-73	-54	-135

CAL YR 1981 TOTAL 500267 MEAN 1371 MAX 7200 MIN 402 MEAN‡ 13.28 CFSM‡ .52 IN‡ 8.83
WTR YR 1982 TOTAL 882317 MEAN 2417 MAX 17000 MIN 489 MEAN‡ 24.42 CFSM‡ .96 IN‡ 13.0

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02075500 DAN RIVER AT PACES, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1954 to September 1956.
WATER TEMPERATURES: January 1954 to September 1956.
SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
DEC 04...	1030	1210	143	7.2	7.5	3.0	10.7	900	500	25	5.8	2.5
MAR 10...	0830	4550	75	7.1	7.0	65	11.6	1200	1200	19	4.6	1.8
JUN 09...	0915	3620	95	7.2	23.0	120	7.5	K3100	3200	20	5.2	1.8
JUL 14...	0900	2920	87	6.8	26.0	170	5.9	K4400	K13000	20	4.7	2.0
SEP 01...	1400	704	235	7.2	24.0	17	6.4	150	250	28	6.9	2.6

K Result based on colony count outside optimal range.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 04...	18	2.2	33	11	15	.3	15	97	90	.45	.060	.24
MAR 10...	6.6	1.6	16	10	4.9	<.1	13	65	52	.35	.080	.49
JUN 09...	10	1.8	22	13	8.9	.2	14	--	68	.44	.040	.80
JUL 14...	8.6	1.5	23	8.0	6.5	.1	12	70	58	.51	.050	.60
SEP 01...	31	2.4	40	13	31	.2	15	153	126	.66	.060	.70

< Actual value is known to be less than the value shown.

02075500 DAN RIVER AT PACES, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)
DEC 04...	.160	.140	.130	1	1	<100	27	<1	<1	20	20
MAR 10...	.160	.030	.020	--	--	--	--	--	--	--	--
JUN 09...	.230	.070	.050	1	1	100	120	<1	<1	10	<10
JUL 14...	.230	.060	.050	1	1	100	130	3	1	50	<10
SEP 01...	.250	.200	.160	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
DEC 04...	2	<1	10	5	1100	270	3	1	50	16	<.1
MAR 10...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	3	1	13	2	8100	200	9	1	200	2	<.1
JUL 14...	6	2	31	14	17000	190	20	1	420	9	.2
SEP 01...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 04...	<.1	2	2	<1	<1	<1	<1	100	15	21	97
MAR 10...	--	--	--	--	--	--	--	--	--	111	57
JUN 09...	<.1	12	1	<1	<1	<1	<1	20	17	244	98
JUL 14...	<.1	12	4	<1	<1	<1	<1	70	<4	446	93
SEP 01...	--	--	--	--	--	--	--	--	--	33	87

< Actual value is known to be less than the value shown.

02076500 GEORGES CREEK NEAR GRETNA, VA

LOCATION.--Lat 36°56'11", long 79°18'42", Pittsylvania County, Hydrologic Unit 03010105, on left bank 15 ft (5 m) downstream from bridge on State Highway 40, 2.8 mi (4.5 km) southeast of Gretna, and 5.8 mi (9.3 km) upstream from Whitethorn Creek.

DRAINAGE AREA.--9.24 mi^2 (23.93 km^2).

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1703: 1950-52. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 629.54 ft (191.884 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional regulation at low flow from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 9.48 ft^3/s (0.268 m^3/s), 13.93 in/yr (354 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,480 ft^3/s (41.9 m^3/s) Sept. 22, 1979, gage height, 8.50 ft (2.591 m), from rating curve extended above 640 ft^3/s (18 m^3/s) on basis of slope-area measurements at gage heights 4.93 ft (1.503 m) and 6.22 ft (1.896 m) and contracted-opening measurements at gage heights 7.75 ft (2.362 m) and 8.50 ft (2.591 m); minimum daily, 1.0 ft^3/s (0.028 m^3/s) Mar. 12, Apr. 5, 1956, July 28, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.2 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
Jan. 4	1030	*311	8.81	4.04	1.231	May 23	2400	191	5.41	3.24	0.988
Feb. 3	1200	298	8.44	3.95	1.204	May 26	2330	250	7.08	3.63	1.106

Minimum discharge, 1.8 ft^3/s (0.051 m^3/s) Oct. 1, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	4.4	3.0	18	17	8.8	4.9	5.6	20	5.2	6.7	5.2
2	3.2	4.2	3.5	8.4	10	12	4.5	5.6	13	4.9	5.8	5.2
3	2.6	3.5	2.8	53	111	16	6.5	5.4	8.8	4.9	4.9	4.9
4	2.5	3.3	2.9	89	32	12	6.2	4.7	9.4	17	4.7	4.5
5	2.6	3.7	2.8	21	15	11	5.8	4.7	24	11	4.5	4.3
6	2.3	4.5	2.6	12	12	14	6.7	4.5	11	7.2	4.5	4.5
7	2.3	4.2	2.7	9.4	10	49	6.0	4.5	7.8	6.2	4.1	4.3
8	2.2	3.8	2.6	7.5	9.1	25	6.5	4.5	7.0	7.0	17	4.3
9	2.4	3.9	2.6	7.2	8.5	11	8.8	4.5	7.5	7.8	11	4.5
10	2.6	3.4	2.4	5.8	7.8	8.3	7.5	4.1	18	6.2	7.0	4.5
11	3.0	3.1	2.2	5.4	7.0	7.2	7.2	3.9	17	5.8	6.2	4.5
12	3.2	3.1	2.3	5.0	6.7	6.5	6.7	3.9	9.1	9.4	6.5	4.1
13	3.1	2.9	2.4	4.7	7.8	6.0	6.7	3.8	58	6.0	6.0	4.1
14	3.4	2.9	4.6	4.6	7.2	5.4	6.2	3.6	22	5.2	5.8	3.9
15	3.3	3.0	21	4.5	6.7	6.0	6.5	3.6	12	4.5	5.8	4.1
16	3.4	3.1	17	4.5	8.8	5.8	6.2	5.8	9.4	4.3	5.8	4.1
17	3.5	2.8	7.2	4.6	17	5.6	6.7	3.9	14	4.1	5.6	3.8
18	4.5	2.6	5.2	4.8	15	5.2	6.2	3.8	12	4.1	11	3.8
19	5.4	2.6	4.1	5.2	12	5.2	6.7	8.0	9.4	3.6	5.4	3.9
20	5.7	2.7	3.5	5.8	10	8.8	6.0	5.6	8.5	3.8	4.7	7.2
21	6.3	2.5	3.5	6.8	8.8	7.5	6.0	4.5	8.5	3.5	4.3	4.3
22	6.7	2.4	4.9	7.8	7.8	6.0	5.6	10	7.5	3.6	4.3	3.6
23	8.8	2.5	5.3	7.4	7.2	5.6	5.6	16	7.0	7.8	4.3	3.5
24	7.6	4.3	4.0	6.7	6.7	5.2	5.4	30	6.2	7.0	4.1	3.6
25	7.9	3.9	13	6.7	6.0	5.2	5.6	9.4	6.2	5.6	6.7	3.5
26	15	2.9	11	6.0	5.8	8.3	9.1	22	6.0	5.4	5.2	12
27	41	2.9	6.8	5.8	9.4	5.8	11	33	6.0	4.9	4.9	9.1
28	12	2.7	5.2	5.4	8.5	5.2	7.2	13	5.6	4.7	4.9	5.6
29	6.6	2.6	4.3	5.2	---	4.9	6.0	10	5.4	5.4	4.7	4.9
30	5.3	2.6	3.6	6.2	---	4.9	5.8	24	5.4	4.9	4.7	4.1
31	4.7	---	5.6	10	---	4.9	---	14	---	9.8	4.7	---
TOTAL	185.1	97.0	164.6	354.4	390.8	292.3	195.8	279.9	361.7	190.8	185.8	143.9
MEAN	5.97	3.23	5.31	11.4	14.0	9.43	6.53	9.03	12.1	6.15	5.99	4.80
MAX	41	4.5	21	89	111	49	11	33	58	17	17	12
MIN	2.0	2.4	2.2	4.5	5.8	4.9	4.5	3.6	5.4	3.5	4.1	3.5
CFSM	.65	.35	.58	1.23	1.52	1.02	.71	.98	1.31	.67	.65	.52
IN.	.75	.39	.66	1.43	1.57	1.18	.79	1.13	1.46	.77	.75	.58

CAL YR 1981 TOTAL 1887.7 MEAN 5.17 MAX 41 MIN 1.6 CFSM .56 IN 7.60
WTR YR 1982 TOTAL 2842.1 MEAN 7.79 MAX 111 MIN 2.0 CFSM .84 IN 11.44

02077000 BANISTER RIVER AT HALIFAX, VA

LOCATION.--Lat 36°46'35", long 78°54'58", Halifax County, Hydrologic Unit 03010105, on left bank 10 ft (3 m) downstream from bridge on U.S. Highway 360, 1,700 ft (520 m) downstream from Terrible Creek, 1 mi (1.6 km) northeast of Halifax, and 10 mi (16 km) upstream from mouth.

DRAINAGE AREA.--547 mi^2 (1,417 km^2).

PERIOD OF RECORD.--September 1904 to December 1905, October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 892: 1929-30, 1932-35. WSP 972: 1938(M), 1940. WSP 1112: 1943(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 318.54 ft (97.091 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 28, 1904, to Dec. 31, 1905, nonrecording gage at site 400 ft (120 m) upstream at different datum. Dec. 9, 1928, to Sept. 20, 1950, water-stage recorder at site 400 ft (120 m) upstream at present datum.

REMARKS.--Records good. Low and medium flow regulated at times during year by a lake 0.5 mi (0.8 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 504 ft^3/s (14.27 m^3/s), 12.51 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s (1,420 m^3/s) Sept. 20, 1944, gage height, 40.8 ft (12.44 m), from floodmarks, from rating curve extended above 13,000 ft^3/s (370 m^3/s) on basis of slope-area measurement of peak flow and velocity-area study; minimum, 6.0 ft^3/s (0.17 m^3/s) on many days in August and September 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,820 ft^3/s (165 m^3/s) Feb. 4, gage height, 17.49 ft (5.331 m); minimum daily, 83 ft^3/s (2.35 m^3/s) Oct. 15-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	270	160	1090	982	670	366	280	667	255	311	166
2	116	239	163	1420	1060	926	356	266	1040	225	286	165
3	110	221	170	1080	2840	1490	242	264	740	203	236	164
4	102	209	179	3030	5680	1490	258	250	1180	203	208	161
5	96	199	182	4330	3690	1060	329	234	2360	918	193	157
6	92	210	176	2700	1440	820	345	222	2710	732	188	153
7	90	260	170	1190	874	877	315	216	1160	224	180	150
8	88	218	168	767	694	2270	308	211	621	253	178	147
9	86	191	162	618	602	2040	343	205	1150	228	781	144
10	85	180	157	415	550	1130	369	197	1100	214	975	143
11	85	175	153	190	362	798	365	189	1330	282	673	141
12	85	171	150	236	423	686	328	181	1750	610	541	139
13	86	168	149	361	447	614	312	177	1540	501	297	138
14	85	164	152	348	483	550	302	171	2100	514	263	137
15	83	161	280	334	467	445	296	165	1570	511	246	137
16	83	159	1400	347	464	492	292	161	824	357	228	139
17	83	157	1420	336	806	506	296	199	587	276	254	142
18	84	155	780	296	1890	487	347	186	1040	241	583	142
19	89	153	458	330	1500	457	349	171	1340	220	748	141
20	92	152	245	336	1010	536	308	196	909	216	582	142
21	90	149	224	418	793	848	298	364	683	202	329	143
22	89	147	312	671	661	734	289	265	660	193	248	144
23	90	145	509	723	562	607	277	217	401	195	219	142
24	94	152	554	644	386	530	263	325	315	453	203	140
25	100	166	806	583	411	473	256	1090	327	690	195	138
26	178	166	1660	520	407	452	291	754	301	339	189	142
27	1430	169	1230	360	424	471	396	317	280	243	183	161
28	3360	169	750	310	526	448	444	485	266	217	177	168
29	1200	165	554	400	---	402	377	405	249	343	173	171
30	451	162	315	415	---	370	310	951	242	747	170	166
31	282	---	350	504	---	363	---	900	---	442	167	---
TOTAL	9203	5402	14138	25302	30434	24042	9627	10214	29442	11247	10204	4463
MEAN	297	180	456	816	1087	776	321	329	981	363	329	149
MAX	3360	270	1660	4330	5680	2270	444	1090	2710	918	975	171
MIN	83	145	149	190	362	363	242	161	242	193	167	137
CFSM	.54	.33	.83	1.49	1.99	1.42	.59	.60	1.79	.66	.60	.27
IN.	.63	.37	.96	1.72	2.07	1.64	.65	.69	2.00	.76	.69	.30

CAL YR 1981 TOTAL 94194 MEAN 258 MAX 3360 MIN 83 CFSM .47 IN 6.41
WTR YR 1982 TOTAL 183718 MEAN 503 MAX 5680 MIN 83 CFSM .92 IN 12.49

02077500 HYCO RIVER NEAR DENNISTON, VA

LOCATION.--Lat 36°35'16", long 78°53'56", Halifax County, Hydrologic Unit 03010104, on left bank 60 ft (18 m) upstream from bridge on U.S. Highway 501, 0.8 mi (1.3 km) upstream from Mayo Creek, 2.5 mi (4.0 km) northeast of Denniston, and 7.3 mi (11.7 km) south of South Boston.

DRAINAGE AREA.--289 mi² (749 km²).

PERIOD OF RECORD.--October 1928 to September 1934, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1383: Drainage area, 1930. WSP 1503: 1930(M). WDR VA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 315.24 ft (96.085 m) National Geodetic Vertical Datum of 1929. July 10, 1929, to Mar. 14, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 29 to Sept. 1, which are fair. Small diurnal fluctuation at low flow in some years caused by mill above station. Since 1964, flow regulated by Hyco Lake 15.7 mi (25.3 km) upstream, capacity 75,480 acre-ft (93.1 hm³), and since Apr. 26, 1974, by Roxboro Steam-Electric Generating Plant afterbay Reservoir, capacity 12,000 acre-ft (14.8 hm³). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--38 years, 250 ft³/s (7.080 m³/s), 11.75 in/yr (298 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s (306 m³/s) July 15, 1975, gage height, 24.27 ft (7.397 m), from rating curve extended above 8,200 ft³/s (230 m³/s); minimum, 0.004 ft³/s (<0.001 m³/s) Sept. 14, 1932, gage height, 3.58 ft (1.091 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in August 1928 and September 1945 reached stages of 26.4 ft (8.05 m) and 25.6 ft (7.80 m), respectively, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) Feb. 5, gage height, 16.55 ft (5.044 m); minimum, 10 ft³/s (0.28 m³/s) Oct. 13-14; minimum gage height, 4.59 ft (1.399 m) Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	29	22	944	394	848	171	47	50	167	560	44
2	16	27	24	927	272	1470	167	45	43	113	345	45
3	16	32	26	1010	760	1550	167	45	37	98	260	41
4	17	27	24	1290	1890	1120	167	47	87	94	230	37
5	15	26	24	2000	2950	692	163	42	150	663	210	28
6	14	26	24	2270	2340	312	170	41	694	381	180	24
7	15	25	22	1460	1210	590	167	41	746	145	52	23
8	15	24	22	955	490	999	164	40	767	116	47	23
9	14	23	22	232	464	1350	181	38	1480	127	45	23
10	12	22	22	152	469	1360	179	36	1410	94	119	22
11	12	23	22	133	390	425	166	36	1430	72	330	22
12	11	23	22	130	224	266	162	36	2110	66	990	21
13	11	23	22	131	232	244	161	36	2510	83	2300	19
14	11	23	22	132	250	230	160	29	1310	126	2350	18
15	12	22	105	129	231	224	84	26	637	86	1030	19
16	12	22	373	129	372	287	72	25	423	72	420	21
17	13	21	137	129	944	465	60	63	374	65	250	22
18	12	22	72	122	1610	217	61	43	682	59	205	20
19	11	22	50	132	1920	204	56	30	1080	54	198	19
20	11	23	42	157	1580	214	55	46	1170	53	193	19
21	11	22	60	208	442	230	63	64	753	52	190	20
22	12	22	84	310	563	266	58	47	240	50	183	21
23	13	21	114	238	665	432	53	40	210	50	181	21
24	14	22	121	405	436	402	49	135	197	62	181	20
25	18	29	473	649	399	200	49	116	188	54	183	19
26	22	27	917	902	260	189	53	54	146	50	184	20
27	345	24	1090	343	231	180	70	44	137	48	139	39
28	449	23	880	310	501	174	64	44	131	50	90	30
29	77	22	479	309	---	169	54	46	102	119	60	24
3	42	22	383	315	---	169	49	66	102	230	51	21
31	34	---	360	359	---	170	---	57	---	450	47	---
TOTAL	1303	719	6060	16912	22491	15648	3295	1505	19396	3949	11803	745
MEAN	42.0	24.0	195	546	803	505	110	48.5	647	127	381	24.8
MAX	449	32	1090	2270	2950	1550	181	135	2510	663	2350	45
MIN	11	21	22	122	224	169	49	25	37	48	45	18
CFSM	.15	.08	.68	1.89	2.78	1.75	.38	.17	2.24	.44	1.32	.09
IN.	.17	.09	.78	2.18	2.90	2.01	.42	.19	2.50	.51	1.52	.10

CAL YR 1981 TOTAL 17880 MEAN 49.0 MAX 1090 MIN 11 CFSM .17 IN 2.30
WTR YR 1982 TOTAL 103826 MEAN 284 MAX 2950 MIN 11 CFSM .98 IN 13.36

02079490 JOHN H. KERR RESERVOIR NEAR BOYDTON, VA

LOCATION.--Lat 36°35'56", long 78°18'06", Mecklenburg County, Hydrologic Unit 03010102, at John H. Kerr Dam on Roanoke River, 2.7 mi (4.3 km) upstream from Allen Creek, 6.7 mi (10.8 km) southeast of Boydton, 18 mi (29 km) upstream from the Virginia-North Carolina State line, and at mile 178.7 (287.5 km).

DRAINAGE AREA.--7,780 mi^2 (20,150 km^2), approximately.

PERIOD OF RECORD.--July 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam with earth embankments. Spillway, with crest at elevation 288.0 ft (87.78 m), is equipped with 22 radial gates 32 ft (9.8 m) high by 42 ft (13 m) wide. Storage began in September 1950 during construction; initial filling started June 30, 1952; water in reservoir first reached rule-curve elevation in March 1953. Total capacity at top of gates, elevation, 320 ft (97.5 m), is 2,770,000 acre-ft (3.42 km^3) of which 1,281,400 acre-ft (1.58 km^3) is controlled flood storage between elevations 300 ft (91.4 m), top of power pool, and 320 ft (97.5 m); 316,900 acre-ft (391 hm^3) is available for power between elevations 293.0 ft (89.31 m), bottom of power pool, and 300 ft (91.4 m); 1,171,700 acre-ft (1.44 km^3) is inactive and dead storage below elevation 293.0 ft (89.31 m). Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for navigation and pollution abatement, release of water for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,656,300 acre-ft (3.28 km^3) Apr. 3, 1975, elevation, 318.85 ft (97.185 m); minimum (after first filling to rule curve), 724,700 acre-ft (894 hm^3) Feb. 3, 1956, elevation, 280.23 ft (85.414 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,783,900 acre-ft (2.20 km^3) June 18, elevation, 305.56 ft (93.135 m); minimum, 1,201,200 acre-ft (1.48 km^3) Oct. 24, 26, elevation, 293.71 ft (89.523 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	295.10	1260300	
Oct. 31	296.20	1308940	+48640
Nov. 30	295.28	1268220	-40720
Dec. 31	298.14	1398390	+130170
CAL YR 1981			+118290
Jan. 31	296.27	1312100	-86290
Feb. 28	299.41	1459630	+147530
Mar. 31	301.44	1561800	+102170
Apr. 30	302.70	1627660	+65860
May 31	302.30	1606540	-21120
June 30	300.69	1523440	-83100
July 31	300.27	1502240	-21200
Aug. 31	299.46	1462090	-40150
Sept. 30	297.72	1378650	-83440
WTR YR 1982			+118350

02079640 ALLEN CREEK NEAR BOYDTON, VA

LOCATION.--Lat 36°40'46", long 78°19'37", Mecklenburg County, Hydrologic Unit 03010106, on left bank at upstream side of bridge on U.S. Highway 58, 0.8 mi (1.3 km) upstream from Coleman Creek, 2.3 mi (3.7 km) downstream from Layton Creek, 3.7 mi (6.0 km) east of Boydton, and 11.8 mi (19.0 km) southwest of South Hill.

DRAINAGE AREA.--53.4 mi² (138.3 km²).

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.50 ft (65.989 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 42.7 ft³/s (1.209 m³/s), 10.86 in/yr (276 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,620 ft³/s (159 m³/s) Oct. 23, 1971, gage height, 21.80 ft (6.645 m), from rating curve extended above 3,100 ft³/s (88 m³/s); no flow many days in August, September, and October 1968, September and October 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 1	0500	921	26.1	12.07	3.679
Feb. 3	1800	1020	28.9	12.69	3.868
Mar. 7	2130	1330	37.7	14.15	4.313
June 5	1100	1100	31.2	13.18	4.017
June 18	0300	1030	29.2	12.76	3.889
July 5	1100	*2210	62.6	16.82	5.127
Aug. 12	0030	1990	56.4	16.26	4.956

Minimum discharge, 0.41 ft³/s (0.012 m³/s) Oct. 1, 2, 3, gage height, 1.17 ft (0.357 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	4.0	4.8	460	143	211	20	19	261	18	16	8.5
2	.44	3.8	5.4	82	63	105	19	17	98	14	11	8.3
3	.41	3.6	5.8	234	487	68	18	17	61	12	8.8	8.5
4	.57	3.6	5.9	322	238	58	18	15	123	14	8.0	8.0
5	.57	3.6	6.4	135	90	55	16	13	667	1150	7.3	6.5
6	.62	3.8	6.5	60	63	46	17	12	138	104	7.3	6.0
7	.64	3.7	6.0	44	47	451	17	12	65	43	6.5	5.8
8	.67	3.5	5.6	37	39	346	16	11	47	31	6.8	5.5
9	.68	3.4	5.4	30	37	103	24	10	295	25	63	5.5
10	.64	3.4	5.1	25	48	72	28	9.4	91	23	82	5.4
11	.62	3.6	5.0	21	37	56	21	8.5	199	20	415	5.4
12	.66	3.6	4.9	19	31	48	19	8.0	74	39	475	5.2
13	.91	3.5	4.7	18	64	41	18	7.8	161	33	48	5.1
14	.92	3.5	5.1	17	95	36	17	7.5	239	44	29	4.8
15	1.1	3.6	42	17	54	33	16	6.8	70	23	86	4.6
16	1.1	3.7	115	17	75	32	15	6.5	47	19	40	4.6
17	1.1	4.1	35	18	336	35	16	7.3	113	16	30	4.5
18	1.4	4.2	18	19	255	31	20	7.8	490	14	23	4.5
19	1.5	4.2	12	21	99	28	18	7.0	98	13	20	4.9
20	1.6	4.0	9.9	33	70	34	17	9.9	52	12	16	4.6
21	2.2	4.0	9.1	91	54	38	20	67	111	11	14	4.8
22	2.4	3.9	10	129	42	33	19	19	54	10	14	8.5
23	2.8	3.7	37	83	35	27	16	196	40	10	13	8.8
24	3.7	4.5	21	120	32	24	15	251	30	16	12	5.8
25	5.0	6.6	195	89	28	23	14	323	25	12	11	5.1
26	8.3	6.9	142	57	24	22	49	64	24	9.6	11	6.8
27	29	5.9	61	43	52	20	76	36	20	8.5	9.4	14
28	32	5.5	39	40	315	18	41	111	18	8.3	9.4	9.4
29	9.6	5.2	26	36	---	18	26	47	17	14	16	6.5
30	6.1	4.8	19	47	---	18	21	287	15	9.9	11	5.5
31	4.8	---	33	93	---	18	---	110	---	14	8.8	---
TOTAL	122.49	125.4	900.6	2457	2953	2148	667	1723.5	3743	1790.3	1528.3	191.4
MEAN	3.95	4.18	29.1	79.3	105	69.3	22.2	55.6	125	57.8	49.3	6.38
MAX	32	6.9	195	460	487	451	76	323	667	1150	475	14
MIN	.41	3.4	4.7	17	24	18	14	6.5	15	8.3	6.5	4.5
CFSM	.07	.08	.55	1.49	1.97	1.30	.42	1.04	2.34	1.08	.92	.12
IN.	.09	.09	.63	1.71	2.06	1.50	.46	1.20	2.61	1.25	1.06	.13

CAL YR 1981 TOTAL 5798.01 MEAN 15.9 MAX 380 MIN .41 CFSM .30 IN 4.04
WTR YR 1982 TOTAL 18349.99 MEAN 50.3 MAX 1150 MIN .41 CFSM .94 IN 12.78

OHIO RIVER BASIN

KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC

LOCATION.--Lat 36°23'35", long 81°24'26", Ashe County, Hydrologic Unit 05050001, on right bank 600 ft (183 m) upstream from bridge on State Highways 16 and 88, 0.2 mi (0.3 km) downstream from Bear Creek, and 4 mi (6.4 km) southeast of Jefferson.

DRAINAGE AREA.--205 mi^2 (531 km^2).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1925-26(M), 1928-30(M), 1931-32, 1933-35(M), 1941-42(m), 1944(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,657.04 ft (809.866 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1934, nonrecording gage on bridge 400 ft (122 m) downstream at same datum. Oct. 14, 1934, to Mar. 25, 1935, nonrecording gage at present site and datum.

REMARKS.--Records good. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 429 ft^3/s (12.15 m^3/s), 28.42 in/yr (722 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,800 ft^3/s (1,500 m^3/s) Aug. 14, 1940, gage height, 22.50 ft (6.858 m), from rating curve extended above 5,100 ft^3/s (144 m^3/s) on basis of slope-area measurement of peak flow; minimum, 52 ft^3/s (1.47 m^3/s) Dec. 24, 1943, result of freezeup; minimum daily, 65 ft^3/s (1.84 m^3/s) Sept. 9, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 15, 1916, reached a stage of 18.0 ft (5.49 m), from floodmarks witnessed by local resident, discharge, 35,200 ft^3/s (997 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft^3/s (78.4 m^3/s) at 1400 hours Feb. 3, gage height, 5.48 ft (1.670 m), no other peak above base of 2,600 ft^3/s (74 m^3/s); minimum, 73 ft^3/s (2.07 m^3/s) Dec. 11, gage height, 1.40 ft (0.427 m), result of freezeup; minimum daily, 112 ft^3/s (3.17 m^3/s) Dec. 11, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	149	146	684	790	352	319	450	537	250	754	495
2	126	145	206	522	520	403	302	407	409	240	427	511
3	135	140	194	366	2130	520	332	378	359	235	329	318
4	129	138	157	1560	1530	500	342	355	372	225	291	263
5	125	138	149	1030	900	493	304	333	623	237	270	241
6	124	144	153	537	692	496	365	319	444	238	263	229
7	121	146	135	427	565	630	333	308	356	233	250	220
8	116	134	143	425	486	764	317	310	326	228	250	213
9	115	129	137	329	457	572	350	299	313	322	537	210
10	114	131	115	210	462	499	358	280	382	403	416	206
11	117	133	112	350	399	456	326	268	507	377	311	206
12	119	130	143	400	367	425	308	263	395	348	277	206
13	118	129	170	433	363	399	300	255	713	337	283	203
14	117	127	190	489	343	395	304	249	518	442	273	206
15	116	125	249	466	343	377	295	247	398	383	258	239
16	118	127	300	430	439	389	287	260	357	354	248	251
17	117	139	217	365	650	556	315	272	333	373	275	204
18	116	142	205	368	777	610	339	338	322	353	271	194
19	114	131	173	428	615	465	307	488	309	639	352	191
20	113	140	148	651	533	429	293	345	289	423	331	196
21	113	142	190	591	476	466	286	361	272	315	257	201
22	115	133	254	509	437	420	275	408	266	317	233	249
23	123	126	359	429	396	378	264	375	268	309	228	235
24	138	137	338	506	370	359	256	517	255	391	226	198
25	148	147	254	405	358	351	262	542	249	330	230	191
26	208	147	267	320	338	504	616	758	268	285	221	203
27	469	140	232	260	360	402	933	774	346	260	213	244
28	326	140	220	250	369	348	1040	570	366	252	211	232
29	198	143	205	280	---	335	662	519	323	245	210	196
30	169	133	281	293	---	328	523	507	286	251	202	189
31	156	---	285	354	---	321	---	526	---	441	285	---
TOTAL	4553	4105	6327	14667	16465	13942	11513	12281	11161	10036	9182	7140
MEAN	147	137	204	473	588	450	384	396	372	324	296	238
MAX	469	149	359	1560	2130	764	1040	774	713	639	754	511
MIN	113	125	112	210	338	321	256	247	249	225	202	189
CFSM	.72	.67	1.00	2.31	2.87	2.20	1.87	1.93	1.82	1.58	1.44	1.16
IN.	.83	.74	1.15	2.66	2.99	2.53	2.09	2.23	2.03	1.82	1.67	1.30

CAL YR 1981 TOTAL 107656 MEAN 295 MAX 2310 MIN 112 CFSM 1.44 IN 19.54
WTR YR 1982 TOTAL 121372 MEAN 333 MAX 2130 MIN 112 CFSM 1.62 IN 22.02

03164000 NEW RIVER NEAR GALAX, VA

LOCATION.--Lat 36°38'50", long 80°58'45", Grayson County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 94, 500 ft (152 m) downstream from Meadow Creek, 1.2 mi (1.9 km) southwest of Old Town, 3.1 mi (5.0 km) southwest of Galax, and 3.6 mi (5.8 km) downstream from Elk Creek.

DRAINAGE AREA.--1,131 mi^2 (2,929 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 758: Drainage area, 1933(M). WSP 893: 1930(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 2,208.04 ft (673.011 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height transmitter at station, recorder at Roanoke.

AVERAGE DISCHARGE.--53 years, 1,895 ft^3/s (53.67 m^3/s), 22.75 in/yr (578 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 141,000 ft^3/s (3,990 m^3/s) Aug. 14, 1940, gage height, 25.7 ft (7.83 m), from floodmark, from rating curve extended above 32,000 ft^3/s (910 m^3/s) on basis of computation of peak flow over dam at Fries 6 mi (10 km) downstream and slope-area measurement of peak flow; minimum, 193 ft^3/s (5.47 m^3/s) Jan. 9, 1956, gage height, 0.52 ft (0.158 m), result of freezeup; minimum daily, 265 ft^3/s (7.50 m^3/s) Sept. 19, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft^3/s (250 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1730	12900	365	4.87	1.484	Feb. 3	1700	*17200	487	5.80	1.768

Minimum discharge, 373 ft^3/s (10.6 m^3/s) Oct. 10, gage height, 0.64 ft (0.195 m), but may have been less during period of ice effect; minimum daily, 400 ft^3/s (11.3 m^3/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	537	677	664	2090	3000	1570	1380	2240	1860	1200	2190	1900
2	497	650	821	2620	3500	1740	1300	2020	1680	1070	2170	2240
3	523	621	917	2670	11000	2420	1320	1950	1400	996	1440	1860
4	635	592	821	8870	10600	2620	1420	1720	1260	967	1160	1280
5	523	592	747	8720	5300	2650	1260	1570	1740	980	1040	1030
6	537	578	677	4160	3600	3030	1400	1460	1980	1030	967	927
7	551	621	621	2910	2800	3600	1480	1400	1460	996	927	863
8	510	592	635	2690	2290	4760	1360	1380	1220	1010	914	810
9	484	551	635	2180	2070	3720	1440	1360	1160	1380	1120	771
10	484	537	592	1500	2190	2920	1610	1260	1860	1680	1630	745
11	497	523	540	900	1880	2470	1500	1180	2450	1610	1380	733
12	497	523	420	700	1630	2190	1400	1120	1830	1720	1090	720
13	523	497	400	650	1500	2000	1340	1070	2820	2140	967	707
14	510	510	600	580	1320	1900	1340	1040	2820	3050	940	771
15	497	471	1000	650	1300	1830	1340	1010	1950	2600	927	888
16	510	484	1800	750	1520	1950	1300	1010	1570	2020	901	1010
17	471	523	1480	900	2750	2020	1340	1070	1520	1740	940	837
18	510	537	1240	1200	5240	2570	1700	1070	1440	1460	967	745
19	523	551	800	1600	4180	2400	1550	1380	1320	1650	1060	680
20	484	551	600	2000	3300	2340	1420	1900	1220	1980	996	667
21	484	537	500	3500	2720	2600	1380	1880	1140	1500	940	680
22	497	564	450	3200	2340	2720	1300	1720	1090	1220	823	797
23	537	537	1300	3000	2100	2400	1240	1810	1180	1360	784	823
24	592	564	2200	2800	1860	2100	1180	1950	1090	1680	797	771
25	677	621	1860	2500	1700	1900	1160	2340	1030	1480	876	707
26	806	691	1620	1900	1570	1880	2120	2020	1140	1200	940	680
27	2070	650	1240	1400	1550	1930	4240	2450	1300	1030	888	823
28	1800	635	1120	1300	1630	1630	5110	2370	1440	996	784	888
29	1220	719	1050	1400	---	1480	3630	1880	1500	954	758	771
30	869	650	950	1300	---	1420	2720	1810	1320	954	733	693
31	733	---	900	2000	---	1380	---	1700	---	1200	837	---
TOTAL	20588	17349	29200	72640	86440	72140	52280	50140	46790	44853	32886	27817
MEAN	664	578	942	2343	3087	2327	1743	1617	1560	1447	1061	927
MAX	2070	719	2200	8870	11000	4760	5110	2450	2820	3050	2190	2240
MIN	471	471	400	580	1300	1380	1160	1010	1030	954	733	667
CFSM	.59	.51	.83	2.07	2.73	2.06	1.54	1.43	1.38	1.28	.94	.82
IN.	.68	.57	.96	2.39	2.84	2.37	1.72	1.65	1.54	1.48	1.08	.91

CAL YR 1981 TOTAL 481762 MEAN 1320 MAX 16400 MIN 300 CFSM 1.17 IN 15.85
WTR YR 1982 TOTAL 553123 MEAN 1515 MAX 11000 MIN 400 CFSM 1.34 IN 18.19

03164000 NEW RIVER NEAR GALAX, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: October to December 1949, April 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 130 micromhos Nov. 3, 1981; minimum daily, 10 micromhos Nov. 20, 1975.
WATER TEMPERATURES (water years 1968-82): Maximum, 31.0°C July 17, 18, 1969; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 130 micromhos Nov. 3; minimum daily, 28 micromhos Apr. 6.
WATER TEMPERATURES: Maximum daily, 28.5°C Aug. 1, 8; minimum daily, 0.0°C Dec. 16, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT												
01...	1345	607	58	9.0	20.0	4	9.8	15	3.6	1.5	3.7	1.6
NOV												
20...	1130	564	53	7.4	8.0	5	11.0	15	3.8	1.3	3.7	1.2
JAN												
19...	1120	2540	59	7.2	.0	3	13.4	15	3.8	1.4	4.2	1.5
FEB												
22...	1315	2470	46	6.4	5.5	16	11.6	13	3.1	1.2	2.4	1.1
APR												
16...	1130	1300	45	7.0	14.0	2	9.9	15	3.9	1.3	3.2	1.1
JUN												
01...	1330	1680	52	7.4	21.0	3	7.2	13	3.1	1.2	2.4	1.3
JUL												
02...	1245	1040	56	7.8	24.0	6	8.9	15	3.7	1.3	2.6	1.4
AUG												
23...	1320	784	52	9.0	24.0	16	9.2	16	3.8	1.5	3.1	1.1

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
01...	22	3.3	1.8	<.1	5.4	38	34	<.010	.09	.040	130
NOV											
20...	15	3.2	3.5	<.1	5.2	42	31	<.010	.26	<.010	110
JAN											
19...	17	3.4	4.8	<.1	12	46	41	<.010	.83	.010	62
FEB											
22...	10	3.3	3.1	<.1	9.1	37	29	<.010	.76	.010	50
APR											
16...	17	3.0	4.2	<.1	11	41	38	<.010	.36	<.010	95
JUN											
01...	14	2.0	2.5	<.1	8.7	35	30	<.010	1.0	.030	42
JUL											
02...	16	3.0	3.5	<.1	9.6	48	35	<.010	.37	.010	300
AUG											
23...	19	4.0	3.0	<.1	9.2	35	37	.050	<.10	.040	130

< Actual value is known to be less than the value shown.

03164000 NEW RIVER NEAR GALAX, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	90	38	62	---	51	45	47	52	44	42	44
2	49	118	65	63	---	52	47	46	64	47	44	45
3	50	130	80	65	84	52	30	46	85	55	43	---
4	50	110	50	66	87	52	30	46	63	47	43	44
5	50	110	54	84	73	52	30	46	62	---	49	44
6	49	115	56	81	33	63	28	46	60	---	51	45
7	50	100	56	81	34	61	30	46	59	---	50	45
8	49	80	55	82	33	56	46	46	59	---	45	44
9	51	83	63	53	33	47	31	46	60	---	51	43
10	49	108	---	---	35	41	30	46	60	---	50	43
11	56	90	---	---	46	47	30	46	60	---	46	40
12	55	95	---	---	47	53	41	46	61	44	---	41
13	55	90	39	---	48	46	45	44	62	42	50	41
14	57	30	39	---	48	41	40	44	50	56	44	41
15	54	80	38	---	76	43	47	44	50	---	51	38
16	58	70	40	---	70	41	36	44	50	46	52	41
17	54	68	---	53	70	40	43	44	50	46	51	43
18	55	80	---	---	68	54	43	44	51	48	48	40
19	62	75	---	---	67	43	47	49	46	46	48	41
20	62	65	---	---	45	40	45	84	50	57	52	38
21	64	75	---	---	45	47	38	85	53	46	47	62
22	64	80	43	---	45	47	48	44	61	50	47	73
23	58	83	40	---	46	45	44	44	51	42	47	59
24	63	80	41	---	54	40	40	44	41	40	46	54
25	110	70	40	---	52	41	41	44	67	43	47	63
26	105	80	41	---	52	35	49	43	58	43	44	51
27	110	70	40	---	54	41	49	55	55	46	45	51
28	105	85	45	---	54	43	46	54	60	43	44	52
29	98	80	41	---	---	44	46	80	46	50	45	32
30	100	40	47	---	---	45	47	56	44	54	---	58
31	60	---	39	---	---	42	---	55	---	49	45	---
MEAN	65	84	47	69	54	47	40	50	56	47	47	47

WTR YR 1982 MEAN 54 MAX 130 MIN 28

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.5	14.0	4.0	3.0	---	5.0	15.0	17.5	21.5	27.0	28.5	26.0
2	18.0	13.0	5.0	3.5	---	7.0	15.5	19.0	21.0	26.5	28.0	26.5
3	17.5	17.0	8.0	6.0	2.0	5.5	14.0	18.0	19.5	27.0	27.5	---
4	15.0	14.0	5.5	10.0	3.0	8.0	12.5	18.0	20.0	27.5	27.0	26.5
5	16.5	14.5	5.0	12.0	2.0	11.0	8.0	18.0	21.0	---	28.0	27.5
6	16.0	13.0	7.0	10.5	3.5	10.0	7.0	19.0	21.5	---	28.0	27.0
7	14.0	11.0	3.0	10.0	4.0	8.5	6.5	18.0	21.0	---	27.0	25.0
8	15.0	12.0	2.0	6.0	4.5	9.0	5.5	20.0	20.0	---	28.5	26.5
9	14.5	11.0	1.5	4.0	7.0	8.0	10.0	19.0	22.0	---	27.5	25.0
10	13.0	12.0	---	---	6.5	9.5	9.5	21.5	19.5	---	27.0	24.0
11	13.5	11.0	---	---	6.0	8.5	11.0	22.0	21.0	---	27.0	23.0
12	14.0	9.5	---	---	4.5	11.0	14.5	21.5	21.5	28.0	---	25.0
13	15.0	9.0	3.0	---	5.0	8.0	15.5	20.0	20.0	27.0	26.5	24.5
14	16.5	11.0	4.0	---	7.5	9.0	14.0	19.5	22.0	28.0	26.0	22.0
15	17.0	10.0	2.0	---	6.0	6.0	16.0	20.0	23.5	---	26.0	21.0
16	17.5	9.0	.0	---	4.5	7.5	16.5	18.5	21.5	26.5	25.0	21.0
17	17.0	10.0	---	---	5.0	10.0	14.0	18.5	22.0	27.0	26.0	23.5
18	16.5	10.5	---	---	4.0	11.0	15.0	19.0	23.0	26.0	27.0	21.0
19	13.5	12.0	---	---	5.0	13.0	14.5	19.0	24.0	27.0	26.0	20.5
20	15.0	9.0	---	---	8.0	11.0	16.0	18.0	24.5	26.5	27.0	19.0
21	15.5	8.0	---	---	7.5	10.0	14.0	16.5	26.0	26.0	26.5	20.0
22	15.0	7.0	.0	---	6.0	12.0	13.0	19.0	25.0	27.0	26.0	19.5
23	13.0	8.0	2.0	---	9.0	11.0	16.0	20.0	26.0	25.5	25.5	19.0
24	14.0	8.5	1.0	---	6.0	11.5	16.0	19.5	26.5	27.0	26.0	18.5
25	12.5	7.0	3.0	---	4.5	10.0	15.5	21.5	27.0	27.0	27.0	19.0
26	12.0	7.5	3.0	---	5.0	11.0	16.5	20.0	26.5	27.5	26.5	17.5
27	12.0	7.0	2.5	---	4.0	9.5	15.0	19.0	26.0	27.0	27.5	18.0
28	14.0	6.0	4.0	---	6.0	8.0	17.0	20.5	24.5	26.5	27.0	17.0
29	15.0	6.5	4.5	---	---	10.0	16.5	20.0	25.0	27.0	25.5	18.5
30	12.0	5.0	6.0	---	---	13.0	15.0	21.0	26.0	27.5	---	18.5
31	12.5	---	4.0	---	---	14.0	---	19.5	---	28.0	26.5	---
MEAN	15.0	10.0	3.5	7.0	5.0	9.5	13.5	19.5	23.0	27.0	27.0	22.0

WTR YR 1982 MEAN 16.0 MAX 28.5 MIN .0

03165000 CHESTNUT CREEK AT GALAX, VA

LOCATION.--Lat 36°38'45", long 80°55'10", Galax City, Hydrologic Unit 05050001, on right bank 200 ft (61 m) upstream from bridge on State Highway 89 and 1.7 mi (2.7 km) downstream from Wards Mill Branch.

DRAINAGE AREA.--39.4 mi² (102.0 km²).

PERIOD OF RECORD.--September 1944 to current year.

REVISED RECORDS.--WSP 1385: 1953.

GAGE.--Water-stage recorder. Concrete control since Aug. 30, 1979. Datum of gage is 2,344.17 ft (714.503 m) National Geodetic Vertical Datum of 1929. Prior to June 25, 1948, nonrecording gage, and June 25, 1948, to May 28, 1953, water-stage recorder, at site 200 ft (61 m) upstream at datum 0.86 ft (0.262 m) higher.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--38 years, 67.1 ft³/s (1.900 m³/s), 23.13 in/yr (588 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,980 ft³/s (198 m³/s) Oct. 17, 1947, gage height, 14.4 ft (4.39 m), from floodmark, site and datum then in use, from rating curve extended above 2,200 ft³/s (62 m³/s) on basis of two slope-area and one contracted-opening measurements at gage heights 9.5 ft (2.90 m), 14.4 ft (4.39 m), and 17.4 ft (5.30 m), respectively, site and datum then in use; minimum, 12 ft³/s (0.34 m³/s) part or all of each day Aug. 25-30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 14, 1940, reached a stage of 17.4 ft (5.30 m), at site and datum used 1944-53, discharge, 11,000 ft³/s (312 m³/s) by contracted-opening measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	0800	1240	35.1	4.01	1.222	May 31	2015	*1390	39.4	4.36	1.329

Minimum daily discharge, 14 ft³/s (0.40 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	31	29	35	70	55	50	64	176	48	56	41
2	15	30	36	60	77	71	48	63	91	44	42	35
3	15	29	30	122	799	85	60	67	72	44	39	32
4	15	28	28	379	175	82	49	56	73	43	38	31
5	15	28	28	123	104	77	44	52	145	43	37	30
6	15	29	26	76	83	80	50	51	81	42	36	30
7	15	27	27	68	67	141	44	50	68	41	35	29
8	15	27	26	58	61	99	45	52	64	41	35	28
9	15	27	23	47	67	79	51	49	71	42	46	28
10	15	27	17	35	61	69	48	46	171	42	38	28
11	16	27	16	25	55	63	45	44	93	41	49	28
12	16	27	15	22	51	60	44	43	139	43	46	27
13	16	26	14	20	52	59	43	43	326	91	37	27
14	16	26	20	19	50	56	58	42	131	95	36	33
15	16	26	65	21	52	59	60	41	93	91	35	33
16	16	26	50	25	70	58	48	42	79	94	34	28
17	16	28	37	30	138	56	95	42	75	60	34	27
18	16	27	30	36	117	52	88	42	68	56	37	26
19	16	26	20	43	87	57	57	51	63	50	35	26
20	16	30	17	60	73	60	52	57	58	45	33	27
21	16	26	16	110	64	65	49	54	54	43	32	28
22	16	25	20	64	59	56	45	46	56	42	31	31
23	21	25	82	54	56	52	44	49	54	58	31	27
24	24	28	46	55	54	52	43	55	52	123	33	27
25	24	31	42	49	52	52	44	53	50	53	35	27
26	66	28	37	44	49	59	175	100	91	46	33	33
27	255	27	35	40	46	51	221	107	64	42	32	35
28	51	26	33	37	60	49	205	133	60	46	32	29
29	38	25	31	40	---	49	92	91	54	41	30	28
30	34	25	29	36	---	49	73	91	52	43	30	27
31	32	---	27	50	---	50	---	359	---	54	40	---
TOTAL	887	818	952	1883	2749	2002	2070	2135	2724	1687	1137	886
MEAN	28.6	27.3	30.7	60.7	98.2	64.6	69.0	68.9	90.8	54.4	36.7	29.5
MAX	255	31	82	379	799	141	221	359	326	123	56	41
MIN	15	25	14	19	46	49	43	41	50	41	30	26
CFSM	.73	.69	.78	1.54	2.49	1.64	1.75	1.75	2.31	1.38	.93	.75
IN.	.84	.77	.90	1.78	2.60	1.89	1.95	2.02	2.57	1.59	1.07	.84

CAL YR 1981 TOTAL 12912 MEAN 35.4 MAX 519 MIN 12 CFSM .90 IN 12.19
WTR YR 1982 TOTAL 19930 MEAN 54.6 MAX 799 MIN 14 CFSM 1.39 IN 18.82

03166800 GLADE CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°55'51", long 80°54'02", Wythe County, Hydrologic Unit 05050001, on right downstream abutment of bridge on State Highway 629, 1.0 mi (1.6 km) southwest of Grahams Forge, and at mile 0.4 (0.6 km).

DRAINAGE AREA.--7.15 mi² (18.52 km²).

PERIOD OF RECORD.--May 1976 to current year.

GAGE.--Water-stage recorder. Concrete control since June 1, 1979. Altitude of gage is 1,972 ft (600 m), from topographic map.

REMARKS.--Records fair except those for periods of doubtful or no gage-height record, Mar. 3 to Apr. 4 and July 9 to Aug. 26, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years, 0.94 ft³/s (0.027 m³/s), 1.79 in/yr (45 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s (31.2 m³/s) June 16, 1976, gage height, 5.11 ft (1.558 m), from rating curve extended above 60 ft³/s (1.7 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.02 ft³/s (<0.001 m³/s) Sept. 14, 1981; minimum gage height, 1.36 ft (0.415 m) Sept. 7, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.8 m³/s) and maximum (*).

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3	0730	215	6.09	3.54	1.079
July 9	Unknown	*869	24.6	4.83	1.472

Minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Oct. 10-17, 19-22, Nov. 7-10, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.09	.12	.32	.54	.55	.42	.35	.29	.27	.40	.16
2	.21	.09	.09	.37	3.2	.70	.38	.35	.25	.23	.25	.14
3	.12	.09	.06	2.9	64	1.2	.37	.33	.23	.16	.22	.11
4	.09	.09	.10	15	5.2	1.3	.36	.30	.29	.20	.20	.09
5	.09	.09	.10	1.5	2.5	1.2	.35	.29	.33	.16	.19	.09
6	.09	.08	.06	.84	1.6	1.1	.35	.27	.25	.16	.18	.09
7	.09	.04	.05	.64	1.1	1.6	.33	.27	.22	.16	.18	.09
8	.09	.04	.09	.48	.85	7.0	.31	.27	.21	.75	.20	.09
9	.07	.04	.09	.40	1.0	2.0	.36	.25	.22	35	.30	.09
10	.04	.04	.09	.30	.74	1.0	.30	.22	.29	75	1.5	.09
11	.04	.06	.08	.23	.64	.80	.28	.20	.23	2.0	.36	.09
12	.04	.09	.07	.15	.59	.72	.27	.19	.22	.35	.33	.09
13	.04	.09	.07	.14	.57	.65	.27	.19	.86	.23	.30	.16
14	.04	.09	.09	.13	.54	.60	.27	.18	.31	3.0	.25	.25
15	.04	.09	.33	.14	.52	.75	.27	.18	.27	.90	.23	.19
16	.04	.09	.22	.15	.84	1.1	.27	.20	.28	.60	.21	.16
17	.04	.09	.14	.17	9.8	.85	.30	.22	.28	.45	.20	.13
18	.05	.06	.12	.20	5.8	.80	.26	.20	.22	.35	.19	.11
19	.04	.04	.10	.35	4.5	.75	.23	.29	.19	.80	.25	.09
20	.04	.12	.09	1.8	2.2	1.1	.23	1.1	.16	.40	.18	.10
21	.04	.09	.08	7.5	1.4	2.5	.23	.40	.15	.33	.13	.14
22	.04	.09	.10	1.4	.93	1.3	.23	.29	.28	.28	.08	.23
23	.10	.09	.59	1.9	.74	1.0	.22	.28	.21	.30	.06	.12
24	.12	.14	.25	1.1	.65	.80	.20	.46	.20	.60	.05	.12
25	.10	.13	.20	.95	.59	.72	.24	.47	.20	.30	.05	.12
26	.39	.12	.18	.65	.57	.65	.49	.28	.65	.25	.05	.22
27	.77	.12	.16	.62	.57	.55	.81	2.9	.30	.23	.09	.20
28	.17	.12	.14	.55	.49	.50	.52	.57	.57	.22	.09	.15
29	.14	.12	.14	.49	---	.47	.42	.41	.52	.22	.09	.11
30	.11	.10	.12	.38	---	.45	.37	.35	.30	.23	.09	.09
31	.09	---	.12	.49	---	.43	---	.33	---	.27	.17	---
TOTAL	3.50	2.63	4.24	42.24	112.67	35.14	9.91	12.59	8.98	124.40	7.07	3.91
MEAN	.11	.088	.14	1.36	4.02	1.13	.33	.41	.30	4.01	.23	.13
MAX	.77	.14	.59	15	64	7.0	.81	2.9	.86	75	1.5	.25
MIN	.04	.04	.05	.13	.49	.43	.20	.18	.15	.16	.05	.09
CFSM	.02	.01	.02	.19	.56	.16	.05	.06	.04	.56	.03	.02
IN.	.02	.01	.02	.22	.59	.18	.05	.07	.05	.65	.04	.02

CAL YR 1981 TOTAL 179.87 MEAN .49 MAX 22 MIN .04 CFSM .07 IN .94
WTR YR 1982 TOTAL 367.28 MEAN 1.01 MAX 75 MIN .04 CFSM .14 IN 1.91

03167000 REED CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°56'22", long 80°53'13", Wythe County, Hydrologic Unit 05050001, on left bank 20 ft (6 m) downstream from bridge on State Highway 619 (revised) at Grahams Forge, 2.2 mi (3.5 km) downstream from Glade Creek, and at mile 7.3 (11.7 km).

DRAINAGE AREA.--247 mi^2 (640 km^2).

PERIOD OF RECORD.--July 1908 to September 1916, January 1927 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1235: 1912-13, 1915-16. WSP 1275: 1911, 1927-28(M), 1930-34(M). WSP 1705: 1913(M), 1916(M), 1957 calendar year runoff. WSP 1725: 1915 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,924.65 ft (586.633 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1916, nonrecording gage at same site at datum 0.68 ft (0.207 m) lower. Feb. 3, 1927, to Oct. 28, 1934, and June 11, 1974, to July 22, 1975, nonrecording gage, at present site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--63 years, 267 ft^3/s (7.561 m^3/s), 14.68 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s (496 m^3/s) July 16, 1916, gage height, 11.4 ft (3.47 m), present datum, from floodmarks, from rating curve extended above 7,600 ft^3/s (220 m^3/s) on basis of velocity-area study and slope-area measurement at gage heights 11.4 ft (3.47 m) and 10.01 ft (3.051 m), respectively; minimum observed, about 5 ft^3/s (0.1 m^3/s) Dec. 22, 1909, gage height, 0.49 ft (0.149 m), present datum, result of freezeup; minimum daily, 22 ft^3/s (0.62 m^3/s) Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft^3/s (65 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	Unknown	3000	85.0	4.54	1.384	Feb. 3	2230	*3840	109	5.09	1.551

Minimum discharge, 39 ft^3/s (1.10 m^3/s) Dec. 20, gage height, 1.27 ft (0.387 m), result of freezeup; minimum daily, 45 ft^3/s (1.27 m^3/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	73	71	112	281	300	267	286	211	139	196	104
2	70	70	75	137	286	384	249	262	178	119	170	107
3	70	69	81	400	2450	799	236	245	156	107	145	102
4	68	68	81	1400	2260	829	223	219	139	104	132	94
5	64	67	80	700	979	779	215	204	359	107	125	89
6	64	67	78	500	704	769	228	192	471	104	119	86
7	62	65	73	420	545	1040	219	185	267	99	119	84
8	60	64	72	371	437	1310	211	182	200	102	128	82
9	60	63	71	295	430	819	219	174	170	182	208	79
10	62	64	60	189	530	625	215	163	170	281	371	79
11	63	64	52	130	471	522	211	156	185	200	240	79
12	63	63	48	90	403	471	211	149	152	167	228	79
13	62	62	45	80	365	423	204	142	677	149	204	66
14	61	62	60	70	322	390	204	142	1040	1110	170	64
15	61	62	92	75	295	416	196	135	423	600	152	89
16	61	62	133	85	346	584	189	132	281	384	139	84
17	61	64	122	95	877	568	192	149	228	276	128	82
18	61	65	109	116	1690	507	223	152	192	223	128	79
19	61	66	84	163	1080	471	208	142	167	352	149	79
20	62	65	65	346	922	643	200	156	149	249	132	82
21	59	65	50	1170	722	979	196	170	132	219	116	89
22	61	65	60	1090	568	868	185	152	135	185	110	89
23	64	64	100	704	464	660	174	149	132	189	104	86
24	63	69	383	799	403	537	167	258	122	249	102	84
25	66	72	265	576	359	464	167	281	113	196	113	82
26	74	72	183	423	316	423	311	253	116	170	107	86
27	132	73	149	281	316	371	592	211	196	152	107	99
28	127	73	131	290	300	328	545	185	145	142	104	94
29	96	71	120	249	---	300	423	163	185	145	99	89
30	82	69	109	223	---	286	340	152	159	149	99	84
31	76	---	102	219	---	276	---	236	---	178	113	---
TOTAL	2156	1998	3204	11798	19121	18141	7420	5777	7250	7028	4557	2571
MEAN	69.5	66.6	103	381	683	585	247	186	242	227	147	85.7
MAX	132	73	383	1400	2450	1310	592	286	1040	1110	371	107
MIN	59	62	45	70	281	276	167	132	113	99	99	64
CFSM	.28	.27	.42	1.54	2.77	2.37	1.00	.75	.98	.92	.60	.35
IN.	.32	.30	.48	1.78	2.88	2.73	1.12	.87	1.09	1.06	.69	.39

CAL YR 1981 TOTAL 60907 MEAN 167 MAX 1760 MIN 40 CFSM .68 IN 9.17
WTR YR 1982 TOTAL 91021 MEAN 249 MAX 2450 MIN 45 CFSM 1.01 IN 13.71

03167500 BIG REED ISLAND CREEK NEAR ALLISONIA, VA

LOCATION.--Lat 36°53'20", long 80°43'40", Pulaski County, Hydrologic Unit 05050001, on left bank 700 ft (213 m) downstream from bridge on State Highway 693 (revised), 3.5 mi (5.6 km) southeast of Allisonia, 4 mi (6 km) upstream from Little Reed Island Creek, and at mile 4.5 (7.2 km).

DRAINAGE AREA.--278 mi^2 (720 km^2).

PERIOD OF RECORD.--August 1908 to September 1916, April 1939 to current year.

REVISED RECORDS.--WSP 1033: 1939(P), 1940, 1941-43(P). WSP 1305: 1912(M). WSP 1625: 1940, 1945(M), 1947, 1951, 1952(M).

GAGE.--Water-stage recorder. Datum of gage is 1,902.74 ft (579.955 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1916, nonrecording gage at site 4 mi (6 km) downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, July 8 to Aug. 16, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 400 ft^3/s (11.33 m^3/s), 19.54 in/yr (496 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft^3/s (411 m^3/s) Sept. 30, 1959, gage height, 12.54 ft (3.822 m), from rating curve extended above 6,000 ft^3/s (170 m^3/s) on basis of slope-area measurement of peak flow; minimum, 63 ft^3/s (1.78 m^3/s) Jan. 20, 1971, gage height, 1.63 ft (0.497 m), result of freezeup; minimum daily, 75 ft^3/s (2.12 m^3/s) Jan. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft^3/s (99 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 27	0930	*5120	145	7.07	2.155	Feb. 3	1530	4580	130	6.67	2.033

Minimum discharge, 70 ft^3/s (1.98 m^3/s) Dec. 10, gage height, 1.67 ft (0.509 m), result of freezeup; minimum daily, 80 ft^3/s (2.27 m^3/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	195	141	450	300	392	349	526	537	324	400	224
2	122	183	199	650	474	446	331	484	448	268	350	238
3	122	173	184	1200	3070	622	367	453	405	258	300	197
4	108	166	160	2170	1560	604	516	424	564	257	280	175
5	106	162	158	1150	802	576	400	400	989	271	260	167
6	106	167	150	600	616	604	409	386	670	254	250	164
7	104	151	139	471	500	842	371	371	495	237	240	161
8	100	143	148	415	447	900	362	367	419	230	270	158
9	100	140	129	324	462	664	400	371	405	350	400	157
10	101	140	94	191	500	570	414	349	537	600	800	157
11	105	140	90	160	416	510	367	336	593	400	500	157
12	107	138	85	140	387	474	353	327	424	350	400	157
13	107	135	80	120	382	453	344	323	1660	300	300	157
14	106	133	110	100	352	433	349	310	1070	2000	250	166
15	104	132	200	110	377	443	386	306	560	1500	210	195
16	105	132	494	140	463	474	349	297	452	800	200	175
17	105	137	290	170	664	438	371	340	454	600	210	157
18	105	134	247	210	951	414	748	414	410	500	209	147
19	104	131	154	260	670	405	495	463	375	700	219	146
20	104	134	120	400	598	510	424	438	336	600	210	149
21	104	149	100	1130	516	628	400	521	313	450	194	155
22	105	132	90	990	455	598	362	458	320	400	184	160
23	116	123	250	549	417	489	344	474	320	380	180	165
24	180	144	519	481	397	438	336	453	289	500	224	153
25	152	167	334	404	405	414	331	576	282	400	219	149
26	222	169	273	347	411	453	610	428	313	350	214	173
27	2860	155	254	287	416	414	1300	516	415	320	190	252
28	694	148	220	270	417	376	1610	989	344	300	191	195
29	346	138	190	240	---	362	817	794	382	310	184	168
30	255	133	180	230	---	353	622	1010	321	320	173	161
31	216	---	170	220	---	349	---	598	---	350	189	---
TOTAL	7371	4424	5952	14579	17425	15648	14837	14502	15102	14879	8400	5135
MEAN	238	147	192	470	622	505	495	468	503	480	271	171
MAX	2860	195	519	2170	3070	900	1610	1010	1660	2000	800	252
MIN	100	123	80	100	300	349	331	297	282	230	173	146
CFSM	.86	.53	.69	1.69	2.24	1.82	1.78	1.68	1.81	1.73	.98	.62
IN.	.99	.59	.80	1.95	2.33	2.09	1.99	1.94	2.02	1.99	1.12	.69

CAL YR 1981 TOTAL 79110 MEAN 217 MAX 2860 MIN 75 CFSM .78 IN 10.59
WTR YR 1982 TOTAL 138254 MEAN 379 MAX 3070 MIN 80 CFSM 1.36 IN 18.50

03168000 NEW RIVER AT ALLISONIA, VA

LOCATION.--Lat 36°56'15", long 80°44'45", Pulaski County, Hydrologic Unit 05050001, on left bank on State Highway 653, 0.2 mi (0.3 km) downstream from Big Reed Island Creek, and 0.5 mi (0.8 km) upstream from Allisonia.

DRAINAGE AREA.--2,202 mi² (5,703 km²).

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 783: Drainage area. WSP 823: 1936. WSP 1305: 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 1,848.36 ft (563.380 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, June 15 to Aug. 16, which are fair. Large diurnal fluctuation and some regulation by powerplant 25 mi (40 km) above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 3,198 ft³/s (90.57 m³/s), 19.72 in/yr (501 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 185,000 ft³/s (5,240 m³/s) Aug. 14, 1940, gage height, 23.42 ft (7.138 m), from rating curve extended above 52,000 ft³/s (1,500 m³/s) on basis of flood records for other stations on New River; minimum, 412 ft³/s (11.7 m³/s) Sept. 7, 1930, gage height, 0.47 ft (0.143 m); minimum daily, 453 ft³/s (12.8 m³/s) Sept. 6, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 17,500 ft³/s (500 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 5	0130	22500	637	6.30	1.920	Feb. 3	1430	*32800	929	7.90	2.408

Minimum daily discharge, 600 ft³/s (17.0 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	700	1170	1320	3500	4820	3470	2810	4330	4330	2500	3600	1780
2	900	1520	1270	5000	5020	3290	2650	3820	3160	1900	3800	3030
3	750	775	1320	5500	23600	4650	2280	3770	2720	1600	3000	2530
4	800	1080	1390	15000	19800	5370	2610	3400	2770	1700	2500	1790
5	950	1080	932	17000	10400	5650	2800	2910	3190	1500	1900	1660
6	880	1100	1080	8180	7190	5600	2500	2630	3830	2200	2000	1390
7	795	899	1340	5420	5450	6260	2600	2780	3280	1900	1800	1700
8	786	1190	996	4110	4360	9500	2520	2020	2370	1700	1500	1230
9	783	828	1080	3340	3930	8290	2630	2450	2500	2000	2000	1380
10	748	950	854	2090	3260	6350	2510	2730	3080	3000	2800	1200
11	772	1000	743	1320	3600	5250	2650	2250	4590	3100	2600	1020
12	803	1100	640	1200	3080	4570	2670	2070	3170	3200	2300	1170
13	863	700	600	1000	2800	4220	2460	1700	5820	4000	2000	1300
14	762	750	896	1100	2660	3370	2570	2050	7080	5000	1300	1270
15	839	800	1840	1200	2660	4020	2410	1850	4500	5200	1800	1510
16	798	1000	2360	1300	3050	3960	2430	1710	3500	4000	1700	1330
17	820	1040	2120	1500	4560	4040	2200	1990	2900	2500	1620	1620
18	774	819	1940	1820	9890	4070	3090	2100	3000	3300	1560	1070
19	796	985	1210	2500	8880	4210	2900	2590	2500	3000	1830	1110
20	776	923	795	2840	7140	4520	2690	2790	1900	3100	1660	1360
21	811	921	740	7070	5970	5680	2200	3520	2900	3200	1370	1170
22	803	948	650	6660	5150	6440	2400	3610	2300	2500	1600	1380
23	861	1130	2300	5510	4370	5730	2140	2730	2300	2400	1900	1350
24	929	1020	3440	5270	3650	4600	2060	3330	2100	2800	1300	1350
25	989	928	2990	4320	3390	3920	2040	4360	2000	2900	1390	1160
26	1660	997	2350	3380	3240	3900	3750	4200	2100	3000	1490	1030
27	6610	1170	2030	2400	2830	3460	8220	3750	2500	2300	1540	1770
28	2980	1010	1900	2290	3040	3400	10300	5330	2700	1800	1340	1470
29	1940	1030	1700	2450	---	3240	7200	4310	3000	1900	1160	1360
30	1490	1160	1600	2310	---	2730	5330	4340	2400	1800	1430	1210
31	979	---	1400	2820	---	2740	---	3410	---	2000	1300	---
TOTAL	36147	30023	45826	129400	167790	146500	97620	94830	94490	83000	59090	43700
MEAN	1166	1001	1478	4174	5993	4726	3254	3059	3150	2677	1906	1457
MAX	6610	1520	3440	17000	23600	9500	10300	5330	7080	5200	3800	3030
MIN	700	700	600	1000	2660	2730	2040	1700	1900	1500	1160	1020
CFSM	.53	.46	.67	1.90	2.72	2.15	1.48	1.39	1.43	1.22	.87	.66
IN.	.61	.51	.77	2.19	2.83	2.47	1.65	1.60	1.60	1.40	1.00	.74

CAL YR 1981 TOTAL 768909 MEAN 2107 MAX 21100 MIN 500 CFSM .96 IN 12.99
WTR YR 1982 TOTAL 1028416 MEAN 2819 MAX 23600 MIN 600 CFSM 1.28 IN 17.37

03169000 CLAYTOR RESERVOIR NEAR RADFORD, VA

LOCATION.--Lat 37°04'28", long 80°35'05", Pulaski County, Hydrologic Unit 05050001, at Claytor Dam on New River, 0.5 mi (0.8 km) upstream from Little River, and 5.5 mi (8.8 km) upstream from Radford.

DRAINAGE AREA.--2,382 mi² (6,169 km²).

PERIOD OF RECORD.--May 1939 to current year (monthly figures only).

REVISED RECORDS.--WSP 2108: 1961-65 monthend contents and change in contents.

GAGE.--Water-stage recorder. Datum of gage is approximately National Geodetic Vertical Datum of 1929 (levels by Appalachian Power Co.). Prior to Sept. 11, 1943, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by gravity overflow concrete dam. Spillway with crest at elevation 1,818.5 ft (554.28 m) is equipped with 9 lift gates 30 ft (9.1 m) high by 50 ft (15.2 m) wide. Dam completed and storage began May 22, 1939; water in reservoir reached minimum pool elevation in January 1940. Total level-pool capacity at elevation 1,847.0 ft (562.97 m), 1.5 ft (0.46 m) below top of gates, is 230,100 acre-ft (284 hm³) of which about 100,000 acre-ft (123 hm³) is controlled storage above minimum pool elevation of 1,820.0 ft (554.74 m). Reservoir is used for hydroelectric power and recreation.

COOPERATION.--Records furnished by Appalachian Power Co.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1844.81	220400	
Oct. 31	1845.00	221200	+800
Nov. 30	1843.32	214000	-7200
Dec. 31	1844.95	221000	+7000
CAL YR 1981			-2200
Jan. 31	1845.15	221900	+900
Feb. 28	1844.50	219100	-2800
Mar. 31	1844.50	219100	0
Apr. 30	1844.88	220700	+1600
May 31	1845.54	223500	+2800
June 30	1844.41	218700	-4800
July 31	1844.68	219900	+1200
Aug. 31	1845.33	222600	+2700
Sept. 30	1844.85	220600	-2000
WTR YR 1982			+200

03170000 LITTLE RIVER AT GRAYSONTON, VA

LOCATION.--Lat 37°02'15", long 80°33'25", Pulaski County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 693 (revised) at Snowville, 0.5 mi (0.8 km) southeast of Graysonton, 7 mi (11 km) south of Radford, and at mile 8.6 (13.8 km).

DRAINAGE AREA.--300 mi² (777 km²).

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 823: 1929-36. WSP 1143: 1945. WSP 1305: 1929(M). WSP 1555: Drainage area (at site used 1928-41). WSP 1625: 1951(M). WSP 1725: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 1,816.04 ft (553.529 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 20, 1931, nonrecording gage at bridge 1.0 mi (1.6 km) downstream at datum 17.99 ft (5.483 m) lower. Nov. 20, 1931, to Nov. 12, 1941, water-stage recorder 1.2 mi (1.9 km) downstream at datum 20.58 ft (6.273 m) lower.

REMARKS.--Records good except those for periods of no gage-height record, Jan. 7 to Feb. 16 and July 8 to Aug. 16, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 363 ft³/s (10.28 m³/s), 16.43 in/yr (417 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s (646 m³/s) June 21, 1972, gage height, 13.40 ft (4.084 m), from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurements at gage heights 12.76 ft (3.889 m) and 13.40 ft (4.084 m); minimum, 21 ft³/s (0.59 m³/s) Feb. 22, 1942, result of freezeup; minimum daily, 50 ft³/s (1.42 m³/s) Sept. 21, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,080 ft³/s (144 m³/s) time unknown Feb. 3, gage height, 5.40 ft (1.646 m), no other peak above base of 3,000 ft³/s (85 m³/s); minimum daily, 66 ft³/s (1.87 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	168	134	389	220	420	300	419	464	247	300	159
2	85	155	170	593	400	424	290	384	414	228	250	162
3	97	148	183	1420	3000	617	320	357	356	213	230	150
4	92	141	155	2140	1700	634	450	328	399	217	200	135
5	84	138	154	1200	800	584	300	302	680	223	190	124
6	83	134	150	627	550	664	284	285	564	220	180	120
7	81	125	132	450	450	844	283	275	388	215	180	120
8	78	116	137	370	380	1030	263	267	324	205	200	116
9	75	115	125	300	400	702	287	263	301	200	250	115
10	76	116	75	170	450	574	315	250	352	450	600	115
11	79	118	72	130	370	510	292	240	833	300	400	116
12	83	116	68	110	340	475	270	230	428	260	300	117
13	84	114	66	95	330	447	260	220	957	230	230	113
14	84	113	90	85	300	422	256	212	902	1500	190	114
15	83	112	261	100	320	408	294	204	472	1100	180	121
16	83	113	435	120	380	455	296	195	369	600	170	126
17	82	115	300	150	607	447	287	193	346	450	192	120
18	82	115	220	180	964	409	427	216	326	350	219	110
19	83	113	150	220	708	403	367	227	291	500	228	105
20	82	115	100	350	612	527	315	309	267	450	181	110
21	83	124	90	1000	541	485	295	394	246	350	165	115
22	82	120	80	900	488	430	277	375	243	310	155	120
23	83	110	514	500	447	400	258	391	257	300	150	125
24	107	131	535	420	421	370	249	427	237	600	159	115
25	132	155	334	350	392	350	245	452	227	300	186	110
26	142	156	288	300	355	400	327	450	227	260	161	130
27	1270	144	247	250	339	360	708	395	314	250	148	180
28	654	136	210	230	339	330	1120	537	281	220	145	150
29	309	129	180	210	---	310	679	500	267	230	143	130
30	221	121	160	200	---	310	489	527	247	240	135	120
31	185	---	138	190	---	300	---	486	---	250	142	---
TOTAL	4923	3826	5953	13749	16603	15041	10803	10310	11979	11468	6559	3763
MEAN	159	128	192	444	593	485	360	333	399	370	212	125
MAX	1270	168	535	2140	3000	1030	1120	537	957	1500	600	180
MIN	74	110	66	85	220	300	245	193	227	200	135	105
CFSM	.53	.43	.64	1.48	1.98	1.62	1.20	1.11	1.33	1.23	.71	.42
IN.	.61	.47	.74	1.70	2.06	1.87	1.34	1.28	1.49	1.42	.81	.47

CAL YR 1981 TOTAL 68549 MEAN 188 MAX 1740 MIN 54 CFSM .63 IN 8.50
WTR YR 1982 TOTAL 114977 MEAN 315 MAX 3000 MIN 66 CFSM 1.05 IN 14.26

03171000 NEW RIVER AT RADFORD, VA

LOCATION.--Lat 37°08'30", long 80°34'10", Pulaski County, Hydrologic Unit 05050001, on left bank 2,000 ft (610 m) downstream from bridge on U.S. Highway 11 at Radford, 5 mi (8 km) downstream from Little River, and 5.5 mi (8.8 km) downstream from Claytor Dam.

DRAINAGE AREA.--2,748 mi² (7,117 km²).

PERIOD OF RECORD.--October 1907 to September 1915, August 1939 to current year. Records for August 1898 to September 1907, published in WSP 27, 36, 48, 65, 83, 98, 128, 169, 205, 243, and 536, are unreliable and should not be used. Gage-height records collected at same site since 1895 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 873: Drainage area. WSP 953: 1940-41. WSP 1305: 1908-12. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,712.16 ft (521.866 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 30, 1939, nonrecording gage at highway bridge 2,000 ft (610 m) upstream at datum 0.85 ft (0.259 m) lower.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000). Some additional regulation at low flow by dam and powerplant on Little River. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 3,848 ft³/s (109.0 m³/s), 19.02 in/yr (483 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 218,000 ft³/s (6,170 m³/s) Aug. 14, 1940, gage height, 35.96 ft (10.961 m), from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of records for other stations on New River and flow over Claytor Dam, computed by Appalachian Power Company; minimum, 165 ft³/s (4.67 m³/s) Aug. 25, 27, 1944, gage height, 1.08 ft (0.329 m); minimum daily, 550 ft³/s (15.6 m³/s) Aug. 22, 1911.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 16, 1916, reached a stage of 35.7 ft (10.88 m), discharge, 200,000 ft³/s (5,660 m³/s), at site and datum used by Geological Survey 1907-15, from reports of the National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,100 ft³/s (1,140 m³/s) Feb. 3, gage height, 12.15 ft (3.703 m); minimum, 556 ft³/s (15.7 m³/s) Dec. 11, gage height, 1.57 ft (0.479 m); minimum daily, 811 ft³/s (23.0 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	995	1020	1500	3480	4190	3650	3310	5480	5100	3400	1750	4570
2	989	1860	1430	4500	7440	3120	3540	3270	5610	2870	3850	4890
3	877	1060	1780	7010	17800	4740	1110	3990	3960	1180	3700	3320
4	884	1180	1550	14200	27700	6200	1030	4680	4370	1200	3620	910
5	1000	1210	1010	18900	12900	6280	3950	4340	2370	1220	2480	909
6	993	1250	850	10100	9390	7280	3600	3020	2810	2450	2950	909
7	874	856	1810	7880	8820	8600	2770	2240	5190	2200	1230	1720
8	978	973	1420	5740	6290	9540	4990	1030	3950	2420	976	1770
9	1010	1140	1460	4520	7370	9250	3190	2570	3480	3730	3940	1770
10	888	1350	1110	3510	4340	8480	1120	2900	4350	1710	3860	1710
11	889	1250	1060	2770	3370	7670	1780	3730	6610	2600	3460	1070
12	1020	1230	819	1870	3180	4170	3620	3500	3170	4240	2930	904
13	979	1250	811	1270	3240	4160	3350	2490	6980	4730	3470	1480
14	982	826	1470	1250	1990	3020	3270	2270	5370	6420	1180	1570
15	987	944	1960	1710	4550	7130	4960	1100	8280	7440	1100	1460
16	992	1160	2740	1640	6100	5490	3630	1060	4330	5770	2230	2030
17	886	1080	2570	1670	7800	3810	1080	2970	4320	2410	2190	2030
18	895	1130	2310	2570	9130	3840	1180	3160	3530	1360	1750	1040
19	1100	1160	1010	3180	8490	5240	3530	2920	1330	2980	2170	909
20	961	1220	1010	2690	8130	5480	3520	3390	1310	4060	1940	2050
21	958	848	1550	7070	6550	5970	3760	3880	3790	4470	1100	1430
22	953	975	1230	8690	5900	5420	3230	3940	3460	3930	934	1480
23	1000	1340	2680	8390	5080	8260	3360	2550	3510	3430	2190	1000
24	888	1800	3320	2100	4320	5930	1030	4350	3470	1130	2120	1380
25	909	1730	5020	4610	4360	4210	1910	5330	3600	1400	1790	1070
26	1150	829	2010	5020	4570	5370	5190	6030	1300	4200	1870	1640
27	6760	1790	2090	4300	5390	3180	6940	6220	1320	3680	2020	1840
28	5560	994	2470	2470	2750	2560	11600	6030	4000	3170	1010	2250
29	3660	826	2660	3000	---	4940	9590	4730	2950	1680	1070	2110
30	2630	1520	2260	3340	---	4540	7040	5070	3890	3840	1850	1860
31	1130	---	2620	1640	---	3720	---	1700	---	1180	1820	---
TOTAL	44777	35801	57590	151090	201140	171250	112180	109940	117710	96500	68550	53081
MEAN	1444	1193	1858	4874	7184	5524	3739	3546	3924	3113	2211	1769
MAX	6760	1860	5020	18900	27700	9540	11600	6220	8280	7440	3940	4890
MIN	874	826	811	1250	1990	2560	1030	1030	1300	1130	934	904
(*)	+13	-121	+114	+14	-50	.00	+27	+46	-81	+19	+45	-35
MEAN#	1457	1072	1972	4888	7134	5524	3766	3592	3843	3132	2256	1734
CFSM#	.53	.39	.72	1.78	2.60	2.01	1.37	1.31	1.40	1.14	.82	.63
IN#	.61	.44	.83	2.05	2.70	2.32	1.53	1.51	1.56	1.31	.95	.70

CAL YR 1981 TOTAL 903500 MEAN 2475 MAX 17800 MIN 803 MEAN# 2472 CFSM# .90 IN# 12.22
WTR YR 1982 TOTAL 1219609 MEAN 3341 MAX 27700 MIN 811 MEAN# 3341 CFSM# 1.22 IN# 16.51

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.
# Adjusted for change in contents.

03173000 WALKER CREEK AT BANE, VA

LOCATION.--Lat 37°16'05", long 80°42'35", Giles County, Hydrologic Unit 05050002, on left bank at Bane, 0.2 mi (0.3 km) downstream from bridge on State Highway 100, 0.2 mi (0.3 km) downstream from Sugar Run, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--305 mi² (790 km²).

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 1143: 1939(M), 1940, 1944, 1946. WSP 1305: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,665.92 ft (507.772 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 326 ft³/s (9.232 m³/s), 14.52 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s (479 m³/s) Apr. 5, 1977, gage height, 16.69 ft (5.087 m), from rating curve extended above 7,200 ft³/s (200 m³/s) on basis of slope-area measurement at gage height 16.50 ft (5.029 m); minimum, 15 ft³/s (0.42 m³/s) Dec. 21, 1958, gage height, 2.42 ft (0.738 m), result of freezeup; minimum daily, 24 ft³/s (0.68 m³/s) Sept. 27, 28, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1878 reached a stage of about 23.5 ft (7.2 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (110 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	1930	5210	148	10.03	3.057	June 13	1930	*6770	192	11.05	3.368
Feb. 3	2300	5540	157	10.27	3.130						

Minimum discharge, 39 ft³/s (1.10 m³/s) Oct. 17, 18, gage height, 2.81 ft (0.856 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	68	62	132	415	328	280	391	179	124	150	72
2	44	63	68	173	470	388	259	345	156	111	140	82
3	41	60	77	598	2600	857	248	321	137	104	120	77
4	43	58	79	3340	3550	888	239	284	125	104	100	70
5	45	57	74	2500	1490	775	224	254	240	102	92	63
6	44	57	72	1050	988	747	233	233	486	99	90	59
7	47	55	68	700	722	1110	237	218	296	93	110	57
8	42	56	66	653	569	1690	218	209	222	97	100	55
9	41	53	66	518	518	1060	221	203	187	138	150	54
10	45	52	62	360	528	799	221	186	182	120	300	52
11	42	52	51	210	466	656	213	171	291	103	250	51
12	43	51	48	150	417	580	207	160	275	120	150	50
13	43	50	45	100	393	514	205	151	2730	135	123	49
14	42	49	67	90	336	483	203	143	2630	230	108	49
15	41	49	86	110	330	528	198	136	974	338	98	52
16	41	49	164	120	372	981	189	129	605	199	91	53
17	41	51	155	140	1330	995	186	128	437	159	88	54
18	40	50	132	149	2210	763	212	139	349	130	89	51
19	41	55	80	184	1330	644	211	136	284	125	115	49
20	41	56	60	198	1030	721	201	135	239	120	98	50
21	43	53	50	474	855	1010	200	136	205	140	83	53
22	42	52	65	1250	688	1020	192	134	185	110	76	66
23	45	53	173	837	554	828	180	394	179	115	72	61
24	46	57	613	818	478	676	172	599	162	150	71	63
25	46	59	445	693	423	570	167	366	143	140	74	57
26	56	63	313	548	368	499	373	258	134	120	73	59
27	163	66	245	371	347	433	783	249	129	100	77	66
28	230	63	207	370	337	376	696	237	135	90	71	68
29	129	61	178	323	---	334	556	204	132	110	65	68
30	92	60	154	278	---	306	458	237	129	120	63	60
31	77	---	133	262	---	290	---	206	---	130	66	---
TOTAL	1816	1678	4158	17699	24114	21749	8182	7092	12557	4076	3353	1770
MEAN	58.6	55.9	134	571	861	702	273	229	419	131	108	59.0
MAX	230	68	613	3340	3550	1690	783	599	2730	338	300	82
MIN	40	49	45	90	330	290	167	128	125	90	63	49
CFSM	.19	.18	.44	1.87	2.82	2.30	.90	.75	1.37	.43	.35	.19
IN.	.22	.20	.51	2.16	2.94	2.65	1.00	.86	1.53	.50	.41	.22

CAL YR 1981 TOTAL 68152 MEAN 187 MAX 2800 MIN 32 CFSM .61 IN 8.31
WTR YR 1982 TOTAL 108244 MEAN 297 MAX 3550 MIN 40 CFSM .97 IN 13.20

03175500 WOLF CREEK NEAR NARROWS, VA

LOCATION.--Lat 37°18'20", long 80°51'00", Giles County, Hydrologic Unit 05050002, on right bank at downstream side of bridge on State Highway 724, 2.8 mi (4.5 km) southwest of Narrows, and at mile 3.5 (5.6 km).

DRAINAGE AREA.--223 mi² (578 km²).

PERIOD OF RECORD.--July 1908 to September 1916, March 1938 to current year.

REVISED RECORDS.--WSP 973: 1940-41(M). WSP 1235: 1912-13, 1915-16. WSP 1505: 1940, monthly and yearly runoff. WSP 1725: 1913(M), 1915-16(M), 1941 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,583.83 ft (482.751 m) National Geodetic Vertical Datum of 1929. July 22, 1908, to Sept. 30, 1916, and Mar. 31 to Nov. 7, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 300 ft³/s (8.496 m³/s), 18.27 in/yr (464 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s (365 m³/s) Jan. 29, 1957, gage height, 12.55 ft (3.825 m), from floodmark in gage well, 13.8 ft (4.21 m), from floodmark at downstream side of bridge, from rating curve extended above 5,700 ft³/s (160 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 8.8 ft³/s (0.25 m³/s) Dec. 25, 1953, gage height, 2.28 ft (0.695 m), result of freezeup; minimum daily, 16 ft³/s (0.45 m³/s) Sept. 17, 18, 26-28, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	1730	4180	118	8.43	2.569
Feb. 3	1730	4260	121	8.49	2.588
Feb. 18	0100	2680	75.9	7.14	2.176
June 13	1230	*6240	177	9.77	2.978

Minimum discharge, 32 ft³/s (0.91 m³/s) Oct. 1, gage height, 2.47 ft (0.753 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	56	70	178	771	319	258	380	162	118	169	110
2	37	52	76	230	611	409	232	329	152	103	143	106
3	41	49	82	700	2740	651	223	301	134	96	122	95
4	42	47	78	2890	2310	660	215	255	120	99	108	79
5	40	46	80	1940	1200	635	198	225	861	98	95	72
6	38	49	76	950	859	635	223	204	643	96	99	67
7	40	49	66	738	653	1070	216	189	440	88	119	62
8	37	47	66	675	530	1230	203	184	320	102	106	60
9	37	45	71	558	523	902	214	176	285	138	217	57
10	36	43	68	375	587	731	212	158	725	104	310	54
11	36	42	49	251	515	626	200	145	744	146	224	52
12	36	41	47	150	452	562	197	135	620	122	176	52
13	36	41	45	100	418	524	192	127	4210	114	144	52
14	35	40	69	90	356	520	189	120	2180	543	126	52
15	34	39	104	110	339	708	180	114	1040	335	113	69
16	34	39	144	120	414	987	169	108	687	198	100	69
17	34	41	120	130	1230	927	166	136	507	154	168	57
18	35	46	100	140	2150	786	176	140	398	140	167	52
19	36	48	70	150	1310	674	163	129	312	139	166	48
20	35	49	60	378	1030	759	157	129	259	131	123	48
21	35	49	50	1060	841	934	159	130	220	153	106	52
22	35	50	90	1130	687	934	151	122	199	119	95	60
23	36	47	654	857	559	777	140	458	194	123	84	63
24	36	52	831	867	492	642	134	527	164	161	84	55
25	39	62	541	675	429	545	133	585	147	150	88	52
26	46	65	389	536	371	472	413	369	135	124	106	52
27	113	65	301	388	353	402	602	275	143	108	92	63
28	157	67	243	349	338	342	672	230	149	96	78	65
29	99	73	206	293	---	302	555	220	134	127	74	57
30	75	72	173	262	---	275	456	216	123	129	69	52
31	63	---	159	261	---	261	---	182	---	161	76	---
TOTAL	1467	1511	5178	17531	23068	20200	7398	6998	16407	4515	3947	1884
MEAN	47.3	50.4	167	566	824	652	247	226	547	146	127	62.8
MAX	157	73	831	2890	2740	1230	672	585	4210	543	310	110
MIN	34	39	45	90	338	261	133	108	120	88	69	48
CFSM	.21	.23	.75	2.54	3.70	2.92	1.11	1.01	2.45	.66	.57	.28
IN.	.24	.25	.86	2.92	3.85	3.37	1.23	1.17	2.74	.75	.66	.31

CAL YR 1981 TOTAL 75707 MEAN 207 MAX 3040 MIN 25 CFSM .93 IN 12.63
WTR YR 1982 TOTAL 110104 MEAN 302 MAX 4210 MIN 34 CFSM 1.35 IN 18.37

03176500 NEW RIVER AT GLEN LYN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°22'22", long 80°51'39", Giles County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on U.S. Highway 460 at Glen Lyn, 0.3 mi (0.5 km) upstream from East River, and 6.3 mi (10.1 km) downstream from Wolf Creek.

DRAINAGE AREA.--3,768 mi² (9,759 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1927 to current year.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1305: 1928(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 1,490.24 ft (454.225 m) National Geodetic Vertical Datum of 1929. Aug. 11, 1927, to Oct. 16, 1934, on left bank just upstream from highway bridge at same datum, and Oct. 17, 1934, to June 16, 1939, on left bank 200 ft (61 m) upstream from highway bridge at same datum.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000) 55 mi (88 km) above station. Corps of Engineers satellite and gage-height telemeters at station.

AVERAGE DISCHARGE.--55 years, 4,986 ft³/s (141.2 m³/s), 17.97 in/yr (456 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 226,000 ft³/s (6,400 m³/s) Aug. 14, 1940, gage height, 27.50 ft (8.382 m), from rating curve extended above 89,000 ft³/s (2,500 m³/s) on basis of slope-area measurement of peak flow; minimum, 717 ft³/s (20.3 m³/s) Jan. 5, 1981, result of freezeup; minimum daily, 820 ft³/s (23.2 m³/s) Sept. 8, 1930; minimum gage height, 2.10 ft (0.640 m) Sept. 8, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,400 ft³/s (1,430 m³/s) Feb. 4, gage height, 12.14 ft (3.700 m); minimum, 905 ft³/s (25.6 m³/s) Oct. 25, Dec. 11, gage height, 3.01 ft (0.917 m); minimum daily, 950 ft³/s (26.9 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1430	1830	3500	3270	3730	4840	7510	3210	4180	1500	1960
2	1110	1170	1680	5000	7570	5180	4410	6570	5540	3620	2000	5460
3	1130	1900	1630	8000	19000	5750	4530	4570	5990	3180	3500	4420
4	1050	1190	1930	15000	40800	8670	2040	5190	4620	1600	4000	3570
5	1040	1280	1730	28000	21700	9550	1870	5670	6260	1490	3600	1240
6	1130	1310	1200	16100	13900	9400	5420	5360	3930	1420	2680	1170
7	1110	1310	1080	11100	11900	11600	3940	3890	3730	2480	3420	1160
8	1050	1040	1900	9470	9080	14800	3570	3070	6120	2310	1820	2130
9	1070	991	1500	6680	9870	13300	5960	1810	4790	2850	1720	1980
10	1130	1140	1500	5930	7130	11800	4060	3210	4810	4080	4770	1980
11	1070	1310	1300	4000	6180	10200	1950	3620	7030	2260	4450	1920
12	991	1200	1200	3000	4910	8810	2540	4380	7720	2610	4040	1300
13	1060	1190	950	1900	4730	6300	4410	4050	14500	4540	3660	1040
14	1060	1260	1400	1800	4620	6500	4190	3010	16100	6020	3910	1580
15	1050	1000	1900	2500	3340	5780	4090	2750	11500	8030	1590	1640
16	1050	1030	3000	2500	6170	11600	5770	1500	8490	7150	1300	1520
17	1110	1190	3500	2700	12700	8390	4410	1420	6150	5930	2390	2060
18	1060	1160	3200	3500	15800	6910	1960	3450	5870	2680	2410	2140
19	1010	1200	2500	4500	13500	6760	2160	3650	4600	1930	2000	1230
20	1130	1220	1300	3800	12600	8720	4060	3380	2260	3470	2420	1050
21	1040	1260	1100	8000	11100	8870	4210	4130	1960	4400	2260	2080
22	981	991	1600	12000	7440	9640	4470	4810	4340	4740	1390	1510
23	981	991	2300	11000	8280	10700	3890	5230	4010	4310	1240	1610
24	1040	1370	3500	3500	6780	8510	3960	3780	3960	3920	2360	1210
25	981	1800	6000	6000	5900	7710	1610	6870	3850	1650	2420	1420
26	962	1800	4500	7000	5710	6280	3480	6130	4020	1680	2130	1290
27	1750	1030	2600	6360	6140	6910	7680	7910	1770	4340	2170	1770
28	8080	1830	2700	5520	7090	4620	13400	7260	1730	3920	2320	2110
29	5990	1130	2900	3700	---	4010	12900	7450	4280	3410	1370	2360
30	3830	1030	3100	4030	---	5800	9580	4900	3670	1970	1290	2240
31	2860	---	3300	4430	---	5720	---	6100	---	4000	2230	---
TOTAL	49946	37753	69830	210520	287210	252520	141360	142630	166810	110170	78360	58150
MEAN	1611	1258	2253	6791	10260	8146	4712	4601	5560	3554	2528	1938
MAX	8080	1900	6000	28000	40800	14800	13400	7910	16100	8030	4770	5460
MIN	962	991	950	1800	3270	3730	1610	1420	1730	1420	1240	1040
(*)	+13	-121	+114	+14	-50	.00	+27	+46	-81	+19	+45	-35
MEAN‡	1624	1137	2367	6805	10210	8146	4739	4647	5479	3573	2573	1903
CFSM‡	.43	.30	.63	1.81	2.71	2.16	1.26	1.23	1.45	.95	.68	.51
IN‡	.50	.34	.72	2.08	2.82	2.49	1.40	1.42	1.62	1.09	.79	.56

CAL YR 1981 TOTAL 1096549 MEAN 3004 MAX 25700 MIN 871 MEAN‡ 3001 CFSM‡ .80 IN‡ 10.81
WTR YR 1982 TOTAL 1605259 MEAN 4398 MAX 40800 MIN 950 MEAN‡ 4398 CFSM‡ 1.17 IN‡ 15.85

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.
‡ Adjusted for change in contents.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1955-56, 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: October 1964 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1968-71, 1973-82): Maximum, 350 micromhos Nov. 6, 1968; minimum, 70 micromhos Mar. 26, 27, 1979.
WATER TEMPERATURES (water years 1964-71, 1973-82): Maximum, 29.0°C July 10, 1973, July 14, 19, 21, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 285 micromhos Dec. 13; minimum daily, 102 micromhos June 14.
WATER TEMPERATURES: Maximum daily, 27.5°C July 22; minimum, 1.5°C Jan. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV												
03...	1000	3530	197	7.5	14.0	1.5	9.1	570	28	81	18	8.7
JAN												
26...	1000	7670	140	7.4	1.0	4.0	12.9	57	510	53	13	4.9
MAR												
23...	0920	10400	136	7.3	9.0	3.0	10.8	57	580	57	14	5.4
MAY												
12...	1155	5560	135	8.3	19.0	1.6	9.6	24	160	54	13	5.2
JUL												
07...	1145	3830	180	8.5	25.5	2.4	8.3	420	390	80	19	7.8
SEP												
01...	0900	1930	190	8.1	22.0	2.0	5.4	68	2200	81	20	7.5

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV												
03...	4.6	2.4	61	21	5.3	.1	5.8	105	103	.72	.050	.47
JAN												
26...	4.6	2.0	43	13	7.1	.1	6.2	113	77	.82	.100	.40
MAR												
23...	3.1	1.4	51	11	4.4	<.1	6.7	84	77	.81	.050	.29
MAY												
12...	4.4	1.2	48	10	4.0	<.1	5.1	74	72	.39	.030	.36
JUL												
07...	3.5	1.3	63	16	4.0	.1	5.3	88	95	1.1	.150	1.20
SEP												
01...	4.5	1.7	60	21	5.3	.1	6.2	154	102	1.7	.150	.70

< Actual value is known to be less than the value shown.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)
NOV 03...	.060	.050	.040	1	1	100	30	<1	<1	<10	<10
JAN 26...	.060	.030	.020	1	<1	100	26	2	<1	10	10
MAR 23...	.050	.040	<.010	--	--	--	--	--	--	--	--
MAY 12...	.040	.020	.010	4	2	<100	25	1	<1	20	10
JUL 07...	.060	.060	.020	4	3	<100	41	<1	<1	20	10
SEP 01...	.060	.060	.040	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
NOV 03...	1	<1	6	2	190	29	2	<1	20	12	<.1
JAN 26...	<1	<1	13	5	330	52	9	3	50	5	<.1
MAR 23...	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	1	<1	6	5	150	<3	2	2	30	<3	<.1
JUL 07...	<1	<1	6	4	210	23	<1	<1	30	6	<.1
SEP 01...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	MERCURY DISSOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 03...	<.1	3	2	<1	<1	<1	<1	40	11	3	100
JAN 26...	<.1	<1	<1	<1	<1	<1	<1	20	10	12	100
MAR 23...	--	--	--	--	--	--	--	--	--	14	89
MAY 12...	<.1	7	5	<1	<1	<1	<1	160	6	6	94
JUL 07...	<.1	1	2	<1	<1	<1	<1	50	10	5	91
SEP 01...	--	--	--	--	--	--	--	--	--	8	58

< Actual value is known to be less than the value shown.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	178	258	220	190	135	143	128	124	125	155	185
2	216	193	250	205	200	143	143	126	132	125	163	150
3	208	188	225	---	---	142	157	124	119	137	120	135
4	208	198	240	205	148	123	157	132	120	135	115	148
5	211	198	240	180	145	124	173	124	130	154	145	157
6	228	189	240	163	165	122	176	120	105	154	145	165
7	221	195	258	170	170	121	139	124	119	172	145	167
8	218	208	250	173	165	117	140	139	117	144	140	171
9	218	218	248	175	160	117	139	150	109	147	160	172
10	214	217	240	180	160	119	135	165	122	138	163	156
11	208	218	245	195	170	125	159	157	124	138	145	153
12	218	216	263	205	165	133	160	130	120	132	140	157
13	218	217	285	200	190	137	149	127	118	120	155	173
14	218	203	280	203	139	142	134	130	102	113	155	180
15	218	203	265	200	140	140	137	157	117	106	160	173
16	218	218	280	223	138	126	142	158	---	109	165	170
17	---	220	240	240	119	125	---	168	125	106	165	170
18	215	218	243	255	109	142	158	160	122	118	175	167
19	218	215	238	220	111	140	161	---	130	130	163	156
20	223	198	220	190	116	---	166	139	---	136	138	176
21	216	200	250	150	116	---	137	140	150	114	163	173
22	218	203	243	150	117	135	137	152	---	114	170	171
23	214	221	205	160	127	136	138	122	131	137	168	173
24	203	221	200	158	122	124	139	157	131	137	197	171
25	216	197	190	165	126	137	162	120	121	139	178	184
26	234	194	183	157	132	138	166	115	141	156	163	---
27	223	198	200	160	129	137	133	110	140	139	165	195
28	173	265	190	170	122	145	127	110	151	112	160	173
29	144	250	200	180	---	159	116	118	146	140	165	166
30	141	265	220	195	---	139	116	116	140	165	183	163
31	176	---	225	200	---	138	---	120	---	143	170	---
MEAN	209	211	236	189	144	133	146	135	126	133	158	167

WTR YR 1982 MEAN 166 MAX 285 MIN 102

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	13.5	7.5	5.0	6.5	6.0	13.0	14.5	21.0	23.0	23.5	22.5
2	18.0	14.0	8.5	5.0	5.5	7.5	14.0	14.5	21.0	23.0	23.5	23.0
3	16.0	14.5	8.0	---	---	8.0	13.0	14.0	22.0	23.5	25.0	23.0
4	14.5	15.0	8.5	5.5	5.0	8.0	11.5	14.5	22.5	23.5	26.0	22.5
5	15.0	15.0	7.5	6.5	5.0	7.5	11.0	16.0	20.0	23.0	26.0	22.0
6	16.0	14.5	6.5	6.0	4.5	7.5	10.5	16.5	22.5	23.5	26.5	21.5
7	16.0	11.5	6.0	7.5	4.0	7.0	8.5	16.5	17.0	25.0	26.0	21.0
8	14.5	9.5	7.5	5.5	4.0	5.0	8.0	17.0	20.5	25.5	26.0	21.5
9	14.5	10.0	6.0	4.0	5.0	6.0	8.5	16.0	21.0	25.0	25.5	21.5
10	14.5	10.0	4.0	2.0	5.0	7.5	8.5	15.5	21.5	25.0	25.0	21.5
11	14.0	10.0	3.5	1.5	5.0	8.0	9.0	16.5	22.0	25.5	24.0	21.5
12	15.0	10.0	4.0	2.0	4.5	9.0	10.0	---	19.0	25.0	24.0	21.5
13	14.5	10.0	5.5	2.0	4.5	10.5	13.0	19.5	17.0	25.0	24.0	22.5
14	15.5	10.5	5.5	2.5	4.0	10.0	12.5	20.0	17.5	24.5	23.5	23.5
15	15.0	10.0	4.5	2.0	5.5	9.0	14.5	21.0	21.5	24.5	23.5	23.5
16	16.0	9.5	5.0	2.0	6.0	8.0	14.5	22.0	---	24.5	24.0	23.0
17	---	11.0	4.5	2.0	7.5	8.0	---	20.5	22.0	25.0	26.5	22.0
18	16.0	11.0	6.0	2.0	7.0	9.5	13.5	22.0	20.5	25.5	25.0	22.5
19	14.0	10.0	4.0	3.0	6.0	10.5	14.0	---	21.0	25.0	25.5	23.0
20	12.0	11.5	3.5	3.0	7.0	---	---	20.0	---	25.5	26.5	21.5
21	11.5	8.5	2.0	4.5	6.5	---	14.5	19.5	22.0	26.5	26.0	20.0
22	13.5	7.5	2.5	4.0	7.0	9.5	13.5	19.5	---	27.5	22.5	19.0
23	15.0	6.0	3.5	4.5	5.5	9.5	12.5	20.5	22.0	26.0	23.5	17.5
24	13.0	6.0	6.0	4.0	8.0	10.0	12.0	19.0	22.0	25.5	23.5	17.5
25	11.5	8.0	6.0	3.0	8.5	10.5	13.0	19.0	23.5	25.5	24.5	18.5
26	12.5	8.5	6.0	3.0	7.0	11.0	14.5	21.0	23.0	25.5	23.0	---
27	14.0	9.0	6.5	2.5	5.5	8.5	15.5	20.5	23.0	26.0	23.0	18.0
28	14.0	9.5	5.5	3.5	4.5	6.0	14.0	20.0	23.0	27.0	22.5	18.5
29	14.5	10.0	6.0	3.5	---	7.5	14.0	20.0	25.0	25.5	21.5	18.5
30	14.5	7.5	4.5	4.5	---	10.0	14.0	20.5	24.0	24.5	21.0	20.0
31	14.0	---	4.5	6.0	---	12.5	---	21.5	---	25.0	24.5	---
MEAN	14.5	10.5	5.5	3.5	5.5	8.5	12.5	18.5	21.5	25.0	24.5	21.0

WTR YR 1982 MEAN 14.5 MAX 27.5 MIN 1.5

03177710 BLUESTONE RIVER AT FALLS MILLS, VA

LOCATION.--Lat 37°16'17", long 81°18'18", Tazewell County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on State Highway 717, 0.3 mi (0.5 km) upstream from Brush Fork, and 0.4 mi (0.6 km) southeast of Falls Mills.

DRAINAGE AREA.--44.2 mi^2 (114.5 km^2).

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,310.41 ft (704.213 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some diurnal fluctuation caused by discharge from sewage treatment plant 2.3 mi (3.7 km) upstream. About sixty-five percent of water discharged from the treatment plant was diverted from another drainage basin for municipal supply. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OCTOBER 1980 TO SEPTEMBER 1982.--Peak discharges above base of 450 ft^3/s (13 m^3/s) and maximums (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 20, 1981	0630	498	14.1	4.40	1.341	June 6, 1981	2130	461	13.1	4.12	1.256
May 28, 1981	1900	*667	18.9	5.68	1.731	July 14, 1981	1000	462	13.1	4.13	1.259
Jan. 4, 1982	0715	469	13.3	4.18	1.274	June 10, 1982	0645	*738	20.9	6.26	1.908
Feb. 3, 1982	1030	668	18.9	5.69	1.734	June 13, 1982	1530	727	20.6	6.17	1.881
Feb. 17, 1982	2015	466	13.2	4.16	1.268						

Water year 1981: Minimum discharge, 1.0 ft^3/s (0.028 m^3/s) Jan. 18, gage height, 0.92 ft (0.280 m), result of freezeup; minimum daily, 3.9 ft^3/s (0.11 m^3/s) Jan. 19.

Water year 1982: Minimum discharge, 4.4 ft^3/s (0.12 m^3/s) Sept. 21, gage height, 1.00 ft (0.305 m); minimum daily, 9.0 ft^3/s (0.25 m^3/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	12	16	11	10	48	51	54	166	90	32	31
2	22	12	17	11	59	38	45	49	173	47	30	26
3	21	12	17	9.9	35	33	37	44	126	40	29	21
4	19	18	14	7.0	18	61	32	41	132	38	29	58
5	18	14	14	5.5	12	152	51	35	138	36	26	27
6	19	12	13	10	11	165	38	32	176	108	46	27
7	18	12	12	9.2	10	119	41	31	311	103	42	25
8	17	12	12	9.0	9.0	85	43	28	175	59	50	25
9	18	15	17	8.0	10	66	63	26	121	51	31	21
10	18	13	18	7.0	12	53	71	27	98	47	28	17
11	17	11	15	6.0	72	46	63	123	86	46	25	16
12	16	11	14	6.5	54	41	54	60	75	39	37	15
13	18	10	13	7.5	38	34	65	47	78	39	25	14
14	17	10	12	8.0	28	30	64	44	64	265	23	17
15	17	14	12	8.5	24	24	77	75	58	170	22	56
16	17	16	12	7.0	22	57	67	49	51	138	22	59
17	17	31	11	6.0	44	45	144	43	54	89	22	31
18	22	38	11	4.7	49	45	195	42	51	78	20	23
19	18	20	11	3.9	55	39	138	202	56	71	19	21
20	16	15	9.6	4.1	108	36	363	300	41	69	20	18
21	15	13	6.0	14	86	30	240	174	36	61	19	18
22	15	12	8.0	13	62	29	167	119	35	58	18	16
23	15	13	10	11	152	39	143	91	34	52	17	16
24	15	38	11	9.8	133	54	134	73	32	48	18	14
25	64	27	9.0	8.3	90	86	106	64	59	47	18	14
26	24	21	7.0	10	71	75	86	59	59	43	16	14
27	17	21	9.0	12	54	71	75	226	37	37	16	13
28	15	19	10	12	47	60	64	544	32	61	16	13
29	15	17	11	11	---	52	61	507	30	60	15	13
30	15	16	15	10	---	62	62	309	97	43	22	13
31	13	---	12	7.0	---	50	---	219	---	38	34	---
TOTAL	588	505	378.6	267.9	1375.0	1825	2840	3737	2681	2171	787	692
MEAN	19.0	16.8	12.2	8.64	49.1	58.9	94.7	121	89.4	70.0	25.4	23.1
MAX	64	38	18	14	152	165	363	544	311	265	50	59
MIN	13	10	6.0	3.9	9.0	24	32	26	30	36	15	13
(*)	4.60	4.92	4.36	4.23	5.30	5.52	5.16	5.44	5.48	5.32	4.67	4.85

WTR YR 1981 TOTAL 17847.5 MEAN 48.9 MAX 544 MIN 3.9 * 4.99

* Discharge from Sewage Treatment plant, equivalent in cubic feet per second; furnished by the Sanitary Board of Bluefield.

03177710 BLUESTONE RIVER AT FALLS MILLS, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	12	115	122	98	69	59	45	33	47	35
2	21	13	12	90	164	129	63	61	34	29	39	26
3	14	12	11	326	560	142	63	50	30	25	31	22
4	13	12	14	393	313	124	58	43	50	26	29	20
5	14	12	14	237	220	125	60	40	155	29	29	18
6	18	15	12	151	175	104	63	36	91	31	45	16
7	14	11	12	157	132	250	54	33	68	25	46	15
8	13	11	13	127	108	226	50	40	62	23	43	15
9	13	11	12	106	151	191	52	32	159	23	69	14
10	12	10	11	80	139	163	47	30	607	96	47	14
11	12	10	11	50	121	145	45	26	311	99	39	14
12	12	10	9.5	30	104	128	43	25	242	57	32	14
13	11	9.8	9.0	21	97	157	40	23	660	50	29	14
14	12	9.7	17	19	82	154	39	22	436	126	26	24
15	12	9.7	24	23	84	201	37	21	264	56	23	19
16	13	11	23	25	124	213	36	20	197	49	22	15
17	13	11	22	27	315	184	36	21	152	50	24	14
18	16	11	19	30	342	150	36	34	124	44	37	13
19	16	11	15	40	254	138	33	49	100	45	22	12
20	14	17	12	100	209	150	33	59	83	70	21	14
21	14	12	11	325	179	174	33	33	70	42	23	22
22	14	11	111	229	147	174	30	44	66	46	20	30
23	22	11	97	202	120	151	29	111	59	55	20	18
24	18	23	67	163	108	133	28	149	52	45	20	14
25	14	16	51	126	94	115	30	129	46	36	51	14
26	30	13	40	105	80	111	123	79	41	33	26	23
27	73	14	35	82	81	94	96	70	49	29	22	22
28	26	13	31	68	83	82	95	53	42	35	20	18
29	19	12	25	58	---	77	77	58	36	38	18	17
30	15	12	21	52	---	70	65	47	38	58	18	17
31	14	---	28	106	---	67	---	38	---	76	47	---
TOTAL	536	366.2	801.5	3663	4708	4420	1563	1535	4369	1479	985	543
MEAN	17.3	12.2	25.9	118	168	143	52.1	49.5	146	47.7	31.8	18.1
MAX	73	23	111	393	560	250	123	149	660	126	69	35
MIN	11	9.7	9.0	19	80	67	28	20	30	23	18	12
(*)	4.40	4.13	4.52	5.50	5.60	6.25	5.97	5.97	6.28	6.28	6.12	5.34

CAL YR 1981 TOTAL 18079.6 MEAN 49.5 MAX 544 MIN 3.9 * 4.92
WTR YR 1982 TOTAL 24968.7 MEAN 68.4 MAX 660 MIN 9.0 * 5.53

* Discharge from Sewage Treatment plant, equivalent in cubic feet per second; furnished by the Sanitary Board of Bluefield.

03207800 LEVISA FORK AT BIG ROCK, VA

LOCATION.--Lat 37°21'13", long 82°11'45", Buchanan County, Hydrologic Unit 05070202, on left bank at Big Rock, 2,000 ft (610 m) downstream from Rocklick Creek, and 2,500 ft (762 m) downstream from bridge on State Highway 645.

DRAINAGE AREA.--297 mi^2 (769 km^2).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 866.37 ft (264.070 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers satellite and gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--15 years, 393 ft^3/s (11.13 m^3/s), 17.97 in/yr (456 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,000 ft^3/s (1,590 m^3/s) Apr. 4, 1977, gage height, 27.38 ft (8.345 m), from rating curve extended above 7,000 ft^3/s (200 m^3/s) on basis of slope-area measurement of peak flow; minimum, 5.0 ft^3/s (0.14 m^3/s) Oct. 1, 13, 14, 17, 18, 19, 20, 1969; minimum gage height, 3.63 ft (1.106 m) Oct. 14, 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 23.0 ft (7.0 m), information from local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,400 ft^3/s (323 m^3/s) at 0130 hours May 27, gage height, 12.48 ft (3.804 m), no other peak above base of 4,500 ft^3/s (130 m^3/s); minimum, 18 ft^3/s (0.51 m^3/s) Oct. 14, 15, gage height, 3.63 ft (1.106 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	41	36	450	378	729	353	416	1310	240	158	301
2	47	40	38	350	388	676	315	368	785	170	100	233
3	41	34	39	1550	2270	590	319	416	523	152	81	146
4	32	33	42	1980	1620	486	296	348	517	170	68	109
5	30	34	53	1070	887	438	269	296	1170	257	68	85
6	30	51	51	556	655	378	291	257	813	155	68	72
7	36	46	45	432	467	977	248	237	556	155	67	62
8	32	38	40	363	383	1180	229	278	444	282	127	55
9	28	36	36	328	716	1040	233	248	640	221	278	49
10	25	31	35	196	1070	1010	229	208	2060	167	204	48
11	23	29	31	158	835	924	208	185	1300	179	113	44
12	26	30	29	220	640	828	196	170	785	269	87	43
13	23	27	27	210	563	850	185	158	1750	152	75	41
14	20	26	65	190	450	977	185	146	1200	127	65	932
15	20	27	124	170	416	1490	179	135	736	116	60	353
16	22	28	122	130	902	1720	173	141	511	100	58	161
17	22	29	108	90	2390	1450	170	237	444	89	74	111
18	40	27	133	100	1740	985	176	173	348	132	62	89
19	42	28	98	150	1180	880	158	648	287	122	50	79
20	30	33	89	895	895	1070	158	1270	257	109	47	72
21	24	39	81	2120	771	1280	161	1110	212	113	48	62
22	22	36	291	1470	626	1020	143	835	204	96	45	58
23	50	32	700	970	504	813	138	1790	182	127	43	55
24	78	40	500	750	444	662	132	1120	158	122	55	50
25	53	46	350	543	378	563	135	696	141	94	287	49
26	71	45	250	405	319	536	204	771	196	77	155	53
27	74	49	200	282	444	461	723	4900	498	68	87	79
28	87	50	160	287	750	405	1360	1310	570	75	68	65
29	68	45	120	233	---	373	820	954	328	91	58	50
30	54	40	100	204	---	348	550	689	257	113	53	47
31	45	---	110	233	---	358	---	479	---	138	373	---
TOTAL	1220	1090	4103	17085	23081	25497	8936	20989	19182	4478	3182	3653
MEAN	39.4	36.3	132	551	824	822	298	677	639	144	103	122
MAX	87	51	700	2120	2390	1720	1360	4900	2060	282	373	932
MIN	20	26	27	90	319	348	132	135	141	68	43	41
CFSM	.13	.12	.44	1.86	2.77	2.77	1.00	2.28	2.15	.49	.35	.41
IN.	.15	.14	.51	2.14	2.89	3.19	1.12	2.63	2.40	.56	.40	.46

CAL YR 1981 TOTAL 91949 MEAN 252 MAX 4120 MIN 20 CFSM .85 IN 11.52
WTR YR 1982 TOTAL 132496 MEAN 363 MAX 4900 MIN 20 CFSM 1.22 IN 16.60

03208000 LEVISA FORK BELOW FISHTRAP DAM, NEAR MILLARD, KY

LOCATION.--Lat 37°25'33", long 82°24'45", Pike County, Hydrologic Unit 05070202, on right bank 0.4 mi (0.6 km) downstream from Fishtrap Dam, 1.1 mi (1.8 km) upstream from Lower Pompey Branch, 1.9 mi (3.1 km) northeast of Millard, 2.4 mi (3.9 km) upstream from confluence with Russell Fork, and at mile 129.6 (208.5 km).

DRAINAGE AREA.--392 mi² (1,015 km²).

PERIOD OF RECORD.--February 1938 to current year. Prior to April 1968, published as Levisa Fork at Fishtrap.

REVISED RECORDS.--WSP 953: Drainage area. WSP 1335: 1938(M), 1939, 1940(M), 1942-43, 1944-45(M), 1946, 1948.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft (182.880 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 19, 1968, nonrecording gage at site 3.7 mi (6.0 km) upstream at different datum. Apr. 19, 1968, to June 18, 1973, water-stage recorder at site 1.0 mi (1.6 km) downstream at datum 59.96 ft (18.276 m) higher.

REMARKS.--Records good. Flow regulated by Fishtrap Lake beginning October 1968. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 480 ft³/s (13.59 m³/s), 16.63 in/yr (422 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Jan. 29, 1957, gage height, 33.9 ft (10.33 m), from floodmark, site and datum then in use, from rating curve extended above 15,000 ft³/s (420 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 107.55 ft (32.781 m) Apr. 5, 1977, from floodmark, backwater from Russell Fork; no flow Apr. 5, 1977, all gates on Fishtrap Dam closed; minimum observed discharge prior to Fishtrap Lake, 0.1 ft³/s (0.003 m³/s) Nov. 8, 9, 1939, site then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,750 ft³/s (135 m³/s) May 23, gage height, 79.85 ft (24.338 m); minimum daily, 43 ft³/s (1.22 m³/s) Jan. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	217	138	86	214	765	94	58	1160	186	216	841
2	238	241	107	176	318	842	96	55	1030	183	222	478
3	262	241	86	804	759	677	94	57	501	104	144	257
4	262	243	113	329	2200	553	95	58	262	114	94	154
5	265	199	132	1070	2030	429	95	58	1120	295	96	103
6	266	177	131	2030	872	352	99	58	1150	229	93	89
7	275	178	127	1970	677	703	103	61	608	148	93	84
8	275	181	127	1250	562	1380	120	66	335	102	85	94
9	447	215	119	391	773	1400	107	66	657	440	285	83
10	455	241	114	96	1210	1280	125	66	1330	312	249	66
11	278	247	127	64	1360	1250	113	64	1930	131	51	50
12	166	224	125	43	965	986	110	63	927	315	59	57
13	173	181	127	236	655	819	103	69	1530	171	59	143
14	186	181	127	208	527	1090	94	66	1330	90	59	2130
15	199	180	127	131	449	1910	93	66	566	90	59	1810
16	315	186	129	112	722	2610	93	66	166	91	65	657
17	387	193	131	62	1800	2400	93	66	275	143	73	166
18	297	193	151	56	2780	1430	93	66	122	302	73	247
19	227	193	148	45	1930	1020	93	83	131	269	73	295
20	231	201	181	199	1070	1290	77	244	308	148	73	244
21	232	204	224	1610	984	1640	60	57	244	99	73	259
22	305	197	226	2350	851	1530	58	57	218	104	73	295
23	471	184	699	1470	678	1130	60	2740	218	106	73	312
24	361	183	686	924	471	830	62	3280	210	168	80	312
25	228	183	408	674	415	708	66	972	120	235	84	229
26	381	183	407	454	405	601	64	444	79	123	147	166
27	462	199	379	216	339	567	61	2160	481	60	209	229
28	400	212	224	226	716	593	58	3880	587	68	183	305
29	260	199	226	348	---	489	63	1620	378	75	142	305
30	301	162	162	219	---	349	63	562	196	78	96	250
31	265	---	87	309	---	185	---	570	---	159	755	---
TOTAL	9088	6018	6295	18158	26732	31808	2605	17798	18169	5138	4136	10710
MEAN	293	201	203	586	955	1026	86.8	574	606	166	133	357
MAX	471	247	699	2350	2780	2610	125	3880	1930	440	755	2130
MIN	166	162	86	43	214	185	58	55	79	60	51	50
(*)	-185	-121	+14	-12	+6	+32	+314	+101	+2	+2	-2	-102
MEAN‡	108	80	217	574	961	1058	400.8	675	608	168	131	255
CFSM‡	.28	.20	.55	1.46	2.45	2.70	1.02	1.72	1.55	.43	.34	.65
IN‡	.32	.23	.64	1.69	2.55	3.11	1.14	1.99	1.73	.49	.39	.73

CAL YR 1981 TOTAL 142772 MEAN 391 MAX 4280 MIN 50 MEAN‡ 392 CFSM‡ 1.00 IN‡ 13.58
WTR YR 1982 TOTAL 156655 MEAN 429 MAX 3880 MIN 43 MEAN‡ 433 CFSM‡ 1.11 IN‡ 15.00

* Change in contents, equivalent in cubic feet per second, in Fishtrap Lake.
‡ Adjusted for change in contents.

03208034 GRISSOM CREEK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'43", long 82°02'25", Buchanan County, Hydrologic Unit 05070202, on right bank 150 ft (46 m) upstream from culvert on State Highway 620, 1.7 mi (2.7 km) east of Council, and 250 ft (76 m) upstream from mouth.

DRAINAGE AREA.--2.82 mi^2 (7.30 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,810 ft (552 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85 ft^3/s (2.41 m^3/s) Feb. 3, 1982, gage height, 3.02 ft (0.920 m) from rating curve extended above 61 ft^3/s (1.7 m^3/s); minimum, 0.004 ft^3/s (0.0001 m^3/s) Sept. 2, 1981, gage height, 1.00 ft (0.305 m).

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 45 ft^3/s (1.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 3, 1982	0645	53	1.50	2.85	0.869	May 19, 1982	1530	70	1.98	2.95	0.899
Jan. 4, 1982	0715	45	1.27	2.80	.853	Sept. 14, 1982	1045	65	1.84	2.92	.890
Feb. 3, 1982	0615	*85	2.41	3.02	.920						

July to September 1981: Minimum discharge, 0.004 ft^3/s (0.0001 m^3/s) Sept. 2, gage height, 1.00 ft (0.305 m).

Water year 1982: Minimum discharge, 0.03 ft^3/s (<0.001 ft^3/s) Oct. 14, 15, Aug. 23; minimum gage height, 1.09 ft (0.332 m) Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										1.5	.07	.01
2										.87	.24	.01
3										.39	.16	.02
4										.35	.09	.03
5										.27	.07	.02
6										.64	.87	.06
7										.42	2.1	.07
8										.28	3.2	.04
9										.21	.82	.06
10										.20	.45	.02
11										.18	.30	.01
12										.13	.23	.01
13										.12	.17	.01
14										.40	.12	.01
15										.30	.12	5.4
16										.74	.55	2.7
17										.41	.20	.79
18										.24	.16	.41
19										.19	.18	.28
20										.64	.09	.21
21										.40	.06	.17
22										.23	.05	.14
23										.14	.04	.11
24										.12	.03	.08
25										.12	.02	.07
26										.09	.02	.07
27										.07	.01	.06
28										.61	.01	.05
29										.52	.01	.04
30										.19	.01	.04
31										.11	.01	---
TOTAL	---	---	---	---	---	---	---	---	---	11.08	10.46	11.00
MEAN	---	---	---	---	---	---	---	---	---	.36	.34	.37
MAX	---	---	---	---	---	---	---	---	---	1.5	3.2	5.4
MIN	---	---	---	---	---	---	---	---	---	.07	.01	.01
CFSM	---	---	---	---	---	---	---	---	---	.13	.12	.13
IN.	---	---	---	---	---	---	---	---	---	.15	.14	.15

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.22	.44	2.2	7.5	9.4	2.2	4.6	17	1.1	.65	2.5
2	.19	.19	.46	1.8	7.7	6.8	1.9	4.0	11	.77	.33	1.7
3	.08	.17	.22	25	46	4.9	2.1	3.0	6.0	.68	.22	.94
4	.06	.16	.27	26	13	3.9	1.7	2.4	8.7	.72	.17	.54
5	.17	.16	.36	8.2	7.7	3.5	1.6	2.1	18	.62	.15	.36
6	.12	.19	.30	4.6	5.7	3.2	1.9	1.9	8.8	.47	.17	.27
7	.08	.14	.29	5.0	4.3	10	1.4	1.8	5.3	.39	.10	.20
8	.06	.13	.27	5.2	3.7	13	1.4	2.2	4.3	.40	.13	.17
9	.05	.12	.25	4.5	10	11	1.5	1.6	4.4	.41	.51	.14
10	.05	.12	.22	2.3	11	10	1.3	1.3	10	.32	.25	.12
11	.05	.10	.20	2.1	7.5	8.2	1.2	1.2	6.8	.33	.13	.10
12	.05	.10	.30	1.4	5.8	6.6	1.1	1.1	5.4	.34	.10	.09
13	.04	.09	.47	1.4	5.0	6.0	1.2	.96	23	.30	.08	.10
14	.03	.09	.91	1.3	4.4	5.8	1.1	.86	11	.25	.06	9.2
15	.03	.16	.93	1.0	4.6	8.2	1.1	.78	6.4	.21	.05	3.5
16	.04	.27	.89	.93	13	11	.99	.73	4.7	.18	.51	1.5
17	.05	.12	.94	.63	26	8.5	1.1	.70	3.9	.16	.54	.90
18	.07	.12	.99	.62	21	6.5	1.0	1.0	2.5	.15	.20	.62
19	.08	.11	.72	7.9	12	7.1	.94	15	1.9	.28	.12	.51
20	.06	.23	.52	14	8.2	14	1.1	13	1.6	.23	.07	.41
21	.04	.16	.43	17	6.9	17	1.0	6.1	1.2	.17	.08	.36
22	.04	.12	3.1	11	5.4	10	.86	3.8	1.3	.34	.05	.33
23	.58	.11	5.8	8.0	4.3	7.5	.80	3.0	.99	.33	.04	.30
24	.34	.21	3.3	6.1	4.0	6.4	.79	2.2	.80	.20	.11	.25
25	.19	.20	1.9	4.8	3.0	5.3	.97	1.7	.70	.14	3.1	.23
26	.42	.17	1.3	2.9	2.4	4.5	1.5	1.5	1.7	.10	.81	.32
27	.82	.22	1.1	2.7	7.7	3.5	8.4	1.4	2.3	.08	.38	.54
28	.79	.21	.86	2.1	13	2.8	15	2.5	1.7	.28	.27	.30
29	.48	.18	.68	1.6	---	2.5	8.2	3.2	1.4	.61	.18	.23
30	.34	.17	.48	1.6	---	2.4	5.8	2.2	1.3	.66	.14	.19
31	.26	---	1.4	4.2	---	2.5	---	4.9	---	1.3	1.7	---
TOTAL	5.71	4.74	30.30	178.08	270.8	222.0	71.15	92.73	174.09	12.52	11.40	26.92
MEAN	.18	.16	.98	5.74	9.67	7.16	2.37	2.99	5.80	.40	.37	.90
MAX	.82	.27	5.8	26	46	17	15	15	23	1.3	3.1	9.2
MIN	.03	.09	.20	.62	2.4	2.4	.79	.70	.70	.08	.04	.09
CFSM	.06	.06	.35	2.04	3.43	2.54	.84	1.06	2.06	.14	.13	.32
IN.	.08	.06	.40	2.35	3.57	2.93	.94	1.22	2.30	.17	.15	.35

WTR YR 1982 TOTAL 1100.44 MEAN 3.01 MAX 46 MIN .03 CFSM 1.07 IN 14.51

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year.

PERIOD OF DAILY RECORDS.--
WATER TEMPERATURES: December 1981 to September 1982.

INSTRUMENTATION.--Automatic pumping sampler since Aug. 14, 1981. Water-quality monitor since Dec. 9, 1981.

REMARKS.--Unpublished records of specific conductance and dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR DECEMBER 1981 TO SEPTEMBER 1982.--
WATER TEMPERATURES: Maximum recorded during period, 30.0°C July 22; minimum recorded, 0.0°C on several days during December and January.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
FEB											
25...	1600	--	85	7.9	8.5	--	26	10	6.0	2.7	2.1
MAY											
20...	1452	6.0	--	--	--	--	--	--	--	--	--
JUL											
06...	1045	.31	173	8.3	21.5	7.1	--	--	--	--	--
AUG											
16...	0355	.40	189	8.0	--	--	82	8.0	19	8.4	6.8
16...	0405	.64	146	8.0	--	--	65	9.0	15	6.8	5.7
16...	0515	.82	160	8.0	--	--	72	9.0	17	7.1	5.3
16...	0715	1.5	182	8.1	--	--	70	3.0	16	7.2	9.2
16...	0730	1.4	187	8.0	--	--	70	3.0	17	6.7	7.5
16...	0930	1.1	175	8.0	--	--	78	9.0	19	7.3	5.6
16...	1145	.76	192	8.1	--	--	85	13	21	7.8	6.2
16...	1510	.49	184	8.1	--	--	81	11	20	7.5	5.8
24...	1100	.03	220	7.9	18.0	8.2	89	4.0	21	8.9	8.1
25...	1000	.02	210	8.4	17.7	6.1	81	7.0	19	8.1	8.3
SEP											
04...	1015	.04	--	--	--	--	--	--	--	--	--
15...	0755	.41	155	7.5	--	--	63	6.0	15	6.1	5.9
15...	0830	.33	--	--	--	--	--	--	--	--	--
15...	0945	.28	--	--	--	--	--	--	--	--	--
15...	1035	.41	202	7.8	--	--	75	10	18	7.4	7.8
15...	1040	.77	--	--	--	--	--	--	--	--	--
15...	1050	1.2	245	7.7	--	--	80	15	19	8.0	11
15...	1130	1.8	--	--	--	--	--	--	--	--	--
15...	1135	2.1	--	--	--	--	--	--	--	--	--
15...	1200	2.2	--	--	--	--	--	--	--	--	--
15...	1210	3.1	--	--	--	--	--	--	--	--	--
15...	1215	4.6	--	--	--	--	--	--	--	--	--
15...	1225	7.0	192	7.7	--	--	63	5.0	15	6.3	6.8
15...	1230	11	--	--	--	--	--	--	--	--	--
15...	1235	16	--	--	--	--	--	--	--	--	--
15...	1240	23	--	--	--	--	--	9.0	--	--	--
15...	1310	31	192	7.5	--	--	68	--	16	6.9	4.3
15...	1340	30	--	--	--	--	--	--	--	--	--
15...	1535	14	--	--	--	--	--	--	--	--	--
15...	1715	8.2	--	--	--	--	--	--	--	--	--
16...	1310	2.0	--	--	--	--	--	--	--	--	--

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)
FEB											
25...	1.5	16	12	2.4	<.1	7.4	52	.29	.010	30	--
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	64	9.9	--	--	--	92	--	--	--	--
AUG											
16...	3.0	74	9.1	7.8	--	--	100	--	--	--	--
16...	2.4	56	7.9	6.9	--	--	92	--	--	--	--
16...	2.5	63	8.0	5.0	--	--	93	--	--	--	--
16...	3.0	67	9.2	9.4	--	--	94	--	--	--	--
16...	2.9	67	9.1	9.3	--	--	102	--	--	--	--
16...	3.2	69	10	6.2	--	--	99	--	--	--	--
16...	3.3	72	10	8.4	--	--	103	--	--	--	--
16...	3.3	70	11	6.8	--	--	103	--	--	--	--
24...	2.6	85	9.6	9.6	<.1	4.3	120	.17	.020	--	1
25...	2.4	74	6.9	9.5	--	--	130	--	--	200	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
15...	3.2	57	8.6	5.6	--	--	94	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	3.2	65	8.6	13	--	--	114	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	3.6	65	10	22	--	--	132	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	3.8	58	11	12	--	--	105	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	3.8	59	11	8.8	--	--	105	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
FEB											
25...	--	--	30	--	<1	--	--	--	--	--	<1
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
24...	<1	100	--	2	--	1	10	6	10	3	--
25...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)
FEB											
25...	--	410	50	--	--	<1	--	20	4	--	--
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	160	50	--	--	--	--	10	10	--	--
AUG											
16...	--	920	20	--	--	--	--	80	<1	--	--
16...	--	390	40	--	--	--	--	30	<1	--	--
16...	--	830	40	--	--	--	--	70	<1	--	--
16...	--	630	40	--	--	--	--	50	<1	--	--
16...	--	60	50	--	--	--	--	<10	<1	--	--
16...	--	900	30	--	--	--	--	50	<1	--	--
16...	--	630	20	--	--	--	--	50	<1	--	--
16...	--	860	30	--	--	--	--	50	<1	--	--
24...	9	230	10	10000	10	--	20	60	40	320	<.1
25...	--	260	20	--	--	--	--	70	60	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
15...	--	3100	40	--	--	--	--	130	<10	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	2700	30	--	--	--	--	120	<10	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	3600	40	--	--	--	--	200	10	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	5300	50	--	--	--	--	220	<10	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	85000	40	--	--	--	--	2900	20	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	CYANIDE TOTAL (MG/L AS CN)	SEDI-MENT, SUS-PENDED (MG/L)
FEB										
25...	--	--	--	--	30	--	<4	--	--	--
MAY										
20...	--	--	--	--	--	--	--	--	--	91
JUL										
06...	--	--	--	--	--	--	--	--	--	2
AUG										
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
24...	.01	<1	<1	<1	--	10	--	46	<.01	5
25...	--	--	--	--	--	--	--	--	--	--
SEP										
04...	--	--	--	--	--	--	--	--	--	8
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	89
15...	--	--	--	--	--	--	--	--	--	26
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	89
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	109
15...	--	--	--	--	--	--	--	--	--	113
15...	--	--	--	--	--	--	--	--	--	166
15...	--	--	--	--	--	--	--	--	--	125
15...	--	--	--	--	--	--	--	--	--	143
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	469
15...	--	--	--	--	--	--	--	--	--	1520
15...	--	--	--	--	--	--	--	--	--	2400
15...	--	--	--	--	--	--	--	--	--	24
15...	--	--	--	--	--	--	--	--	--	2220
15...	--	--	--	--	--	--	--	--	--	386
15...	--	--	--	--	--	--	--	--	--	192
16...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT										
23...	1400	.97	219	7.8	--	--	84	--	19	8.9
27...	1505	.97	186	8.0	--	--	73	--	17	7.3
27...	1800	1.7	189	7.9	--	--	73	--	17	7.3
27...	1925	1.3	194	7.9	--	--	77	--	18	7.7
DEC										
12...	1600	1.5	169	7.9	--	--	60	8.0	14	6.0
12...	1700	1.5	167	7.9	--	--	59	8.0	14	5.9
14...	0555	1.5	163	7.9	--	--	63	8.0	15	6.1
14...	0910	1.5	162	7.8	--	--	59	9.0	14	5.9
22...	1505	3.7	116	7.7	--	--	43	16	9.9	4.5
24...	0330	4.5	100	7.5	--	--	37	15	8.6	3.8
24...	1930	2.8	101	7.5	--	--	38	13	8.9	3.9
26...	0210	1.6	111	7.6	--	--	41	14	9.6	4.1
31...	1320	1.5	107	7.5	--	--	41	13	8.8	4.7
JAN										
03...	0200	5.2	109	7.6	--	--	45	14	9.3	5.2
03...	2345	19	78	7.3	--	--	28	7.0	6.3	2.9
04...	0745	38	90	7.3	--	--	33	7.0	7.4	3.6
20...	0045	18	90	7.3	--	--	30	12	6.7	3.1
FEB										
03...	0455	36	82	7.2	--	--	31	9.0	6.9	3.4
03...	1220	67	60	7.0	--	--	21	5.0	4.7	2.3
03...	1510	55	60	7.0	7.5	10.9	18	7.0	3.9	1.9
04...	0225	20	48	6.9	--	--	20	6.0	4.5	2.2
MAY										
31...	1650	1.6	101	7.7	--	--	39	2.0	9.3	3.8
31...	1958	2.9	79	7.2	--	--	29	.00	6.9	2.9
31...	2015	11	101	7.3	--	--	38	2.0	9.1	3.7
31...	2050	20	97	7.4	--	--	35	3.0	8.3	3.5
JUN										
01...	0045	20	78	7.3	--	--	28	3.0	6.4	2.9
01...	1150	17	74	7.6	16.0	--	27	10	6.2	2.7
01...	1330	16	75	7.3	--	--	27	5.0	6.2	2.8
AUG										
09...	1330	.53	180	8.1	22.0	--	72	6.0	17	7.2
24...	1000	.13	195	7.9	24.0	8.1	86	3.0	20	8.8
SEP										
14...	1921	8.0	111	7.2	--	--	39	6.0	9.4	3.8
15...	0121	5.7	112	7.2	--	--	42	7.0	10	4.2
15...	0921	3.9	144	7.5	--	--	46	6.0	11	4.4

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT									
23...	8.6	5.0	64	14	10	--	--	119	--
27...	6.5	3.5	61	13	8.5	--	--	102	--
27...	5.6	4.1	60	14	8.3	--	--	105	--
27...	5.9	3.9	63	14	7.3	--	--	109	--
DEC									
12...	8.0	1.9	52	13	9.5	--	--	88	--
12...	7.5	1.9	51	12	9.4	--	--	87	--
14...	5.8	1.9	55	12	6.4	--	--	83	--
14...	6.9	2.0	50	11	9.3	--	--	84	--
22...	3.7	2.7	27	14	5.8	--	--	73	--
24...	3.4	2.1	22	14	4.7	--	--	64	--
24...	3.4	1.9	25	13	3.8	--	--	64	--
26...	3.4	1.9	27	14	4.1	--	--	66	--
31...	4.1	2.2	28	10	6.4	--	--	62	--
JAN									
03...	3.0	2.2	31	12	5.1	--	--	63	--
03...	2.6	2.2	21	10	2.9	--	--	49	--
04...	3.3	2.2	26	12	3.7	--	--	58	--
20...	3.2	1.6	18	11	4.3	--	--	52	--
FEB									
03...	2.0	1.6	22	12	3.0	--	--	58	--
03...	1.8	1.5	16	12	2.1	--	--	45	--
03...	1.8	1.3	11	11	1.9	<.1	6.3	42	.080
04...	2.2	6.3	14	12	3.4	--	--	47	--
MAY									
31...	1.6	1.9	33	8.0	2.0	--	--	50	--
31...	2.8	2.1	36	7.0	2.8	--	--	62	--
31...	2.0	2.2	32	11	3.1	--	--	61	--
31...	2.5	2.0	37	11	2.6	--	--	65	--
JUN									
01...	1.9	1.5	25	12	2.5	--	--	58	--
01...	2.2	1.5	17	12	2.1	<.1	7.8	52	.070
01...	1.9	1.5	22	12	2.5	--	--	55	--
AUG									
09...	6.4	2.9	66	9.0	9.0	<.1	5.8	99	.050
24...	8.5	2.9	83	10	9.9	--	5.4	96	--
SEP									
14...	3.1	2.7	33	10	3.4	--	7.2	78	--
15...	3.2	2.8	35	11	3.3	--	7.8	79	--
15...	3.4	9.5	40	9.0	9.9	--	7.8	93	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
OCT									
23...	--	--	--	--	--	--	--	--	1500
27...	--	--	--	--	--	--	--	--	1900
27...	--	--	--	--	--	--	--	--	1800
27...	--	--	--	--	--	--	--	--	1100
DEC									
12...	--	--	--	--	--	--	--	--	6000
12...	--	--	--	--	--	--	--	--	440
14...	--	--	--	--	--	--	--	--	420
14...	--	--	--	--	--	--	--	--	250
22...	--	--	--	--	--	--	--	--	960
24...	--	--	--	--	--	--	--	--	1100
24...	--	--	--	--	--	--	--	--	440
26...	--	--	--	--	--	--	--	--	450
31...	--	--	--	--	--	4	--	--	1200
JAN									
03...	--	--	--	--	--	--	--	--	4400
03...	--	--	--	--	--	--	--	--	1400
04...	--	--	--	--	--	--	--	--	5200
20...	--	--	--	--	--	--	--	--	1300
FEB									
03...	--	--	--	--	--	--	--	--	24000
03...	--	--	--	--	--	--	--	--	3700
03...	--	1	<1	<1	20	--	8	5	3600
04...	--	--	--	--	--	--	--	--	1700
MAY									
31...	--	--	--	--	--	--	--	--	9200
31...	--	--	--	--	--	--	--	--	150000
31...	--	--	--	--	--	--	--	--	11000
31...	--	--	--	--	--	--	--	--	760
JUN									
01...	--	--	--	--	--	--	--	--	3900
01...	--	--	--	--	--	--	--	--	1900
01...	--	--	--	--	--	--	--	--	2200
AUG									
09...	--	--	--	--	--	--	--	--	1300
24...	100	--	--	--	--	--	--	--	290
SEP									
14...	<100	--	--	--	--	--	--	--	2000
15...	<100	--	--	--	--	--	--	--	1500
15...	100	--	--	--	--	--	--	--	680

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT									
23...	33	--	--	80	<1	--	--	--	--
27...	67	--	--	120	2	--	--	--	--
27...	74	--	--	110	2	--	--	--	--
27...	80	--	--	80	2	--	--	--	--
DEC									
12...	42	--	--	180	1	--	--	--	--
12...	58	--	--	<10	4	--	--	--	--
14...	59	--	--	10	4	--	--	--	--
14...	33	--	--	10	3	--	--	--	--
22...	46	--	--	60	<1	--	--	--	--
24...	33	--	--	60	<1	--	--	--	--
24...	29	--	--	20	<1	--	--	--	--
26...	27	--	--	30	<1	--	--	--	--
31...	27	--	--	60	<1	--	--	--	--
JAN									
03...	15	--	--	200	<1	--	--	--	--
03...	50	--	--	70	1	--	--	--	--
04...	23	--	--	150	<1	--	--	--	--
20...	76	--	--	50	2	--	--	--	--
FEB									
03...	41	--	--	570	1	--	--	--	--
03...	120	--	--	110	4	--	--	--	--
03...	71	6	2	160	10	<.1	<1	50	12
04...	43	--	--	70	2	--	--	--	--
MAY									
31...	26	--	--	380	9	--	--	--	--
31...	72	--	--	3800	2	--	--	--	--
31...	62	--	--	350	1	--	--	--	--
31...	48	--	--	40	<1	--	--	--	--
JUN									
01...	61	--	--	160	2	--	--	--	--
01...	55	--	--	90	14	--	--	--	--
01...	55	--	--	80	1	--	--	--	--
AUG									
09...	64	--	--	60	18	--	--	--	--
24...	32	--	--	30	15	--	--	--	--
SEP									
14...	64	--	--	110	1	--	--	--	--
15...	60	--	--	90	<1	--	--	--	--
15...	63	--	--	40	1	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), DECEMBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1							---	---	---	5.5	3.5	4.5
2							---	---	---	4.0	1.5	3.0
3							---	---	---	7.5	3.5	6.0
4							---	---	---	8.0	6.5	7.5
5							---	---	---	6.0	4.5	5.5
6							---	---	---	7.0	4.5	5.0
7							---	---	---	7.0	3.5	6.0
8							---	---	---	3.5	1.5	2.5
9							---	---	---	1.5	.0	1.0
10							.5	.0	.0	.0	.0	.0
11							1.0	.0	.0	.0	.0	.0
12							1.5	.0	.0	.0	.0	.0
13							1.0	.0	.0	.0	.0	.0
14							1.0	.0	.5	.0	.0	.0
15							1.5	.5	1.0	.5	.0	.0
16							1.5	.0	.5	.5	.0	.5
17							2.0	.0	1.0	.0	.0	.0
18							1.5	.0	.5	.0	.0	.0
19							.0	.0	.0	.0	.0	.0
20							.0	.0	.0	5.5	.0	4.0
21							.0	.0	.0	6.5	5.5	6.0
22							.5	.0	.0	6.0	5.5	5.5
23							5.0	.5	4.0	7.5	4.0	6.0
24							4.5	3.5	4.0	3.5	.5	2.0
25							3.5	1.5	3.0	3.0	.5	2.0
26							4.0	1.5	3.0	1.0	.0	.0
27							4.5	2.5	3.5	.5	.0	---
28							5.5	2.0	4.0	1.0	.5	.5
29							5.0	1.5	3.5	1.5	.0	.5
30							1.5	.0	.5	5.0	1.0	3.0
31							3.5	.0	1.0	9.0	4.5	7.0
MONTH							5.5	.0	1.5	9.0	.0	2.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.0	3.5	4.5	9.0	7.5	8.5	16.0	8.0	11.5	15.0	8.0	11.5
2	5.5	3.0	4.5	9.5	7.0	8.0	16.0	8.0	12.0	14.0	9.5	11.5
3	8.0	6.0	7.0	9.0	8.0	8.5	18.0	11.5	14.5	18.5	9.0	13.0
4	7.5	5.5	6.5	11.0	8.5	9.5	16.0	8.5	12.0	19.5	8.5	13.5
5	7.5	5.0	6.0	10.5	9.0	9.5	13.5	8.5	11.0	20.5	9.5	14.5
6	6.5	2.5	4.5	9.5	8.0	8.5	11.5	6.0	8.5	21.0	11.0	15.5
7	3.5	1.0	2.0	9.0	7.5	8.0	11.5	5.0	7.0	18.0	12.5	15.5
8	4.5	---	---	8.0	7.0	7.5	7.0	4.0	5.5	16.0	12.0	14.0
9	6.0	4.5	5.0	9.5	7.0	8.0	8.0	4.5	6.0	18.5	9.5	13.5
10	5.5	4.0	4.5	10.0	7.5	8.5	12.5	3.5	6.5	---	---	---
11	6.0	3.5	4.5	10.5	8.0	9.5	11.5	3.5	7.5	---	---	---
12	5.5	3.0	4.0	12.0	9.5	10.5	16.5	5.5	10.5	---	---	---
13	5.0	3.0	4.0	11.0	10.0	10.5	15.0	9.5	11.0	---	---	---
14	5.5	2.0	3.5	10.0	8.5	9.5	17.0	9.0	12.5	---	---	---
15	6.5	3.0	5.0	10.5	9.0	10.0	20.0	8.5	13.5	---	---	---
16	7.5	6.5	7.0	10.5	9.0	10.0	19.0	12.5	15.0	---	---	---
17	8.0	7.5	7.5	14.0	8.5	10.5	15.5	11.5	14.0	---	---	---
18	8.0	7.0	7.5	14.0	7.0	10.5	19.0	8.0	12.5	---	---	---
19	8.0	7.0	7.5	12.0	8.5	10.5	14.0	8.5	11.0	---	---	---
20	8.5	6.5	7.5	11.5	9.5	10.5	15.0	9.5	12.0	---	---	---
21	8.0	7.0	7.5	11.0	7.5	9.5	18.0	9.5	13.5	---	---	---
22	7.0	6.0	6.5	11.5	7.0	8.5	17.0	7.5	10.0	---	---	---
23	7.5	5.0	6.0	12.0	6.0	8.5	18.0	4.5	10.0	---	---	---
24	9.5	6.5	8.0	11.5	5.5	8.5	17.5	5.0	10.5	---	---	---
25	9.0	6.0	7.5	14.0	6.5	10.0	15.0	7.0	11.0	---	---	---
26	6.0	4.5	5.5	9.5	5.5	7.5	19.5	10.5	14.0	---	---	---
27	6.0	5.0	5.5	7.5	3.5	5.5	14.0	10.0	12.0	22.5	16.0	18.5
28	7.5	6.0	6.5	10.0	2.0	5.5	14.5	9.0	11.0	22.0	17.0	19.0
29	---	---	---	12.5	3.5	7.5	15.0	7.5	10.5	22.5	15.5	18.5
30	---	---	---	15.0	7.5	11.0	16.5	7.5	11.5	23.0	17.0	20.0
31	---	---	---	15.0	10.5	12.0	---	---	---	24.0	16.5	20.0
MONTH	9.5	1.0	6.0	15.0	2.0	9.0	20.0	3.5	11.0	24.0	8.0	15.5

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), DECEMBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.5	14.5	15.5	24.0	16.5	19.5				20.0	18.5	19.0
2	18.0	14.0	15.5	24.5	14.5	19.0				20.0	17.5	19.0
3	19.0	13.5	16.0	26.0	17.5	20.5				22.5	17.0	19.0
4	17.0	14.0	15.5	25.5	18.5	21.0				22.0	14.0	17.0
5	15.0	13.5	14.0	26.0	17.0	21.0				23.0	13.0	17.0
6	15.5	13.0	14.0	27.0	18.0	22.0				22.5	13.5	17.0
7	20.0	13.0	16.0	27.0	18.0	21.5				24.5	13.5	18.0
8	19.0	14.5	16.5	27.0	18.5	21.5				22.0	15.5	18.5
9	19.5	14.0	17.0	25.0	19.0	21.0				25.0	15.0	19.0
10	16.0	14.5	15.5	29.5	18.5	23.0				25.5	15.0	19.0
11	19.0	13.5	16.0	28.5	20.0	23.0				24.5	15.0	19.0
12	20.0	14.0	16.5	28.5	18.5	23.0				25.0	16.0	20.0
13	16.0	14.0	15.0	27.5	17.5	21.0				23.5	17.5	20.5
14	17.5	13.5	15.0	---	---	---				20.0	18.0	19.0
15	19.5	13.0	15.5	28.5	16.5	22.5				20.5	17.5	19.0
16	21.0	14.5	17.5	28.0	19.5	23.0				21.5	18.0	19.0
17	19.0	16.0	17.0	29.0	20.0	23.5				22.5	16.5	18.5
18	22.0	14.0	18.0	26.5	21.0	23.5				20.5	15.0	17.5
19	23.0	15.5	18.5	27.0	20.0	23.0				20.0	16.5	18.0
20	23.0	16.5	19.0	26.5	21.0	23.0				18.0	14.5	16.5
21	21.5	14.5	17.5	29.0	20.5	24.0				17.0	13.0	14.5
22	21.0	16.0	18.0	30.0	20.0	23.0				16.0	11.5	13.5
23	23.0	16.0	19.0	27.0	20.5	22.5				18.5	9.5	13.0
24	24.0	14.5	18.5	28.5	20.5	23.5				16.5	10.0	13.0
25	23.0	15.5	19.0	29.0	19.5	23.5				16.5	11.0	13.5
26	24.0	17.0	19.5	29.0	20.0	23.5				14.0	12.5	13.0
27	23.0	16.5	19.0	29.5	20.0	24.0				17.0	12.5	14.0
28	23.5	17.0	19.5	---	---	---				18.5	11.0	14.0
29	24.0	18.0	20.0	---	---	---				20.5	11.0	14.5
30	23.5	18.5	20.0	---	---	---				20.5	12.0	15.0
31	---	---	---	---	---	---				---	---	---
MONTH	24.0	13.0	17.0	30.0	14.5	22.5				25.5	9.5	17.0
YEAR	30.0	.0	11.0									

03208036 BARTON FORK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'37", long 82°02'21", Buchanan County, Hydrologic Unit 05070202, on left bank on private road 200 ft (61 m) upstream from State Highway 620, 0.5 mi (0.8 km) downstream from Coon Flat Branch, 1.8 mi (2.9 km) east of Council, and 180 ft (55 m) upstream from mouth.

DRAINAGE AREA.--1.23 mi² (3.19 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,800 ft (549 m), from topographic map.

REMARKS.--Records good. Recording rain gage at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft³/s (1.39 m³/s) Sept. 14, 1982, gage height, 2.52 ft (0.768 m), from rating curve extended above 24 ft³/s (0.68 m³/s); minimum daily, 0.03 ft³/s (<0.001 m³/s) Sept. 14, 1981.

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4, 1982	0600	25	0.71	2.22	0.677	May 31, 1982	2025	43	1.22	2.41	0.735
Feb. 3, 1982	0530	34	.96	2.33	.710	Sept. 14, 1982	1000	*49	1.39	2.52	.768

July to September 1981: Minimum daily discharge, 0.03 ft³/s (<0.001 m³/s) Sept. 14.

Water year 1982: Minimum discharge, 0.04 ft³/s (0.001 m³/s) Oct. 15; minimum gage height, 0.72 ft (0.219 m) Oct. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										.68	.09	.05
2										.40	.13	.04
3										.28	.10	.09
4										.23	.09	.11
5										.18	.08	.07
6										.29	.89	.14
7										.20	1.1	.09
8										.16	1.5	.10
9										.15	.54	.09
10										.14	.29	.07
11										.13	.23	.05
12										.11	.20	.04
13										.10	.17	.04
14										.17	.15	.03
15										.15	.16	2.4
16										.37	.46	1.2
17										.26	.18	.64
18										.18	.14	.44
19										.15	.13	.25
20										.29	.12	.22
21										.22	.11	.19
22										.15	.10	.17
23										.12	.09	.14
24										.15	.08	.13
25										.14	.07	.12
26										.11	.06	.10
27										.10	.06	.09
28										.25	.05	.09
29										.24	.05	.08
30										.15	.04	.08
31										.11	.05	---
TOTAL	---	---	---	---	---	---	---	---	---	6.36	7.51	7.35
MEAN	---	---	---	---	---	---	---	---	---	.21	.24	.25
MAX	---	---	---	---	---	---	---	---	---	.68	1.5	2.4
MIN	---	---	---	---	---	---	---	---	---	.10	.04	.03
CFSM	---	---	---	---	---	---	---	---	---	.17	.20	.20
IN.	---	---	---	---	---	---	---	---	---	.19	.23	.22

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.13	.17	.86	3.1	4.0	1.0	1.7	16	.54	.76	1.3
2	.09	.12	.17	.69	4.1	3.1	.91	1.5	8.0	.44	.47	.74
3	.08	.11	.15	12	22	2.4	.89	1.2	3.6	.40	.36	.46
4	.07	.10	.18	16	7.2	1.9	.76	1.1	5.3	.40	.29	.32
5	.16	.11	.20	5.7	3.1	2.0	.71	.92	12	.36	.27	.25
6	.11	.14	.17	3.0	2.0	1.9	.76	.85	4.9	.32	.25	.22
7	.10	.12	.16	3.3	1.7	6.9	.61	.79	3.0	.28	.21	.19
8	.08	.11	.15	2.3	1.4	6.4	.70	.96	3.3	.34	.25	.16
9	.07	.10	.13	1.7	3.6	5.1	.79	.75	9.0	.36	.46	.15
10	.07	.10	.11	1.1	5.1	4.8	.70	.66	14	.30	.31	.13
11	.06	.09	.09	1.0	3.8	4.1	.65	.61	5.0	.31	.23	.12
12	.06	.08	.08	.76	2.7	3.4	.62	.56	4.0	.32	.20	.11
13	.06	.08	.10	.55	2.2	3.3	.61	.48	17	.27	.18	.10
14	.06	.08	.27	.52	1.5	3.1	.60	.44	9.0	.25	.16	5.3
15	.04	.11	.50	.44	1.2	5.0	.55	.42	4.0	.22	.14	1.3
16	.05	.14	.41	.40	3.8	5.3	.51	.40	2.4	.19	.22	.63
17	.06	.09	.66	.29	15	4.1	.56	.36	1.7	.18	.23	.43
18	.07	.07	.62	.30	13	2.9	.54	.85	1.4	.17	.16	.35
19	.07	.07	.36	4.7	6.0	4.0	.51	1.2	1.1	.43	.13	.30
20	.05	.13	.33	7.7	3.6	5.9	.55	.69	.91	.39	.11	.27
21	.05	.09	.38	9.5	2.4	7.9	.52	.58	.74	.26	.11	.24
22	.05	.08	1.6	6.9	1.6	5.9	.47	.53	.89	.53	.10	.22
23	.29	.08	2.8	4.5	1.4	4.0	.45	.85	.67	.40	.11	.19
24	.16	.23	1.5	2.7	1.3	2.9	.44	1.2	.56	.28	.12	.17
25	.13	.18	.92	2.0	1.2	2.4	.55	.79	.51	.22	1.8	.16
26	.34	.16	.68	1.4	1.0	2.1	1.2	.84	.79	.19	.48	.26
27	.36	.16	.55	1.2	3.3	1.6	4.0	1.1	.91	.17	.30	.44
28	.27	.15	.44	.98	6.3	1.3	5.8	1.2	.79	.48	.24	.39
29	.21	.13	.36	.83	---	1.2	3.3	1.0	.71	.70	.19	.22
30	.17	.12	.30	.80	---	1.1	2.3	.80	.66	.68	.17	.15
31	.15	---	.69	2.5	---	1.1	---	4.4	---	1.4	.87	---
TOTAL	3.68	3.46	15.23	96.62	124.6	111.1	32.56	29.73	132.84	11.78	9.88	15.27
MEAN	.12	.12	.49	3.12	4.45	3.58	1.09	.96	4.43	.38	.32	.51
MAX	.36	.23	2.8	16	22	7.9	5.8	4.4	17	1.4	1.8	5.3
MIN	.04	.07	.08	.29	1.0	1.1	.44	.36	.51	.17	.10	.10
CFSM	.10	.10	.40	2.54	3.62	2.91	.89	.78	3.60	.31	.26	.42
IN.	.11	.10	.46	2.92	3.77	3.36	.98	.90	4.01	.36	.30	.46

WTR YR 1982 TOTAL 586.75 MEAN 1.61 MAX 22 MIN .04 CFSM 1.31 IN 17.73

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1981 to current year.
WATER TEMPERATURES: July 1981 to current year.
INSTRUMENTATION.--Water-quality monitor since July 17, 1981. Automatic pumping sampler since Aug. 14, 1981.
REMARKS.--Unpublished records of dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.
EXTREMES FOR CURRENT PERIOD.--
SPECIFIC CONDUCTANCE: July to September 1981: Maximum recorded during period, 367 micromhos July 24; minimum recorded, 163 micromhos July 28.
Water Year 1982: Maximum recorded, 393 micromhos Dec. 22; minimum recorded, 110 micromhos Sept. 14.
WATER TEMPERATURES: July to September 1981: Maximum recorded during period, 26.0°C Sept. 2; minimum recorded, 8.5°C Sept. 24.
Water year 1982: Maximum recorded, 25.5°C July 28; minimum recorded, 0.0°C on several days in December and January.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
FEB											
26...	1000	.86	280	7.7	4.0	--	100	--	24	9.8	9.1
MAY											
20...	1443	6.0	--	--	--	--	--	--	--	--	--
AUG											
15...	1845	.40	293	7.9	--	--	120	65	29	11	11
16...	0345	.42	283	7.9	--	--	120	73	27	12	10
16...	0400	1.0	298	8.0	--	--	120	67	30	12	11
16...	0410	2.0	234	7.8	--	--	100	49	25	9.9	9.2
16...	0415	2.9	192	7.5	--	--	78	25	19	7.4	6.2
16...	0515	1.4	220	7.6	--	--	98	40	24	9.2	6.6
16...	0700	.63	227	7.7	--	--	96	46	23	9.4	6.7
25...	1315	.08	305	8.1	20.5	9.9	140	71	31	14	12
SEP											
03...	1550	.18	321	7.7	--	--	120	53	28	12	12
03...	1555	.34	327	7.6	--	--	120	58	29	12	11
03...	1655	.18	332	7.6	--	--	130	75	32	13	10
04...	1005	.12	--	--	--	--	--	--	--	--	--
06...	1400	.17	--	--	--	--	--	--	--	--	--
06...	1430	.32	--	--	--	--	--	--	--	--	--
06...	1435	.53	--	--	--	--	--	--	--	--	--
06...	1555	.53	--	--	--	--	--	--	--	--	--
06...	1645	.32	--	--	--	--	--	--	--	--	--
06...	2145	.17	--	--	--	--	--	--	--	--	--
15...	0505	.17	244	7.1	--	--	94	38	22	9.5	7.5
15...	0545	.32	--	--	--	--	--	--	--	--	--
15...	0600	.53	--	--	--	--	--	--	--	--	--
15...	0610	.82	--	--	--	--	--	--	--	--	--
15...	0615	1.2	--	--	--	--	--	--	--	--	--
15...	0700	1.2	229	7.4	--	--	84	37	20	8.2	6.8
15...	0815	3.2	--	--	--	--	--	--	--	--	--
15...	0845	3.1	263	7.5	--	--	91	45	22	8.8	8.9
15...	0855	2.2	--	--	--	--	--	--	--	--	--
15...	0915	1.6	--	--	--	--	--	--	--	--	--
15...	0920	1.5	--	--	--	--	--	--	--	--	--
15...	0955	1.0	--	--	--	--	--	--	--	--	--
15...	1000	.89	--	--	--	--	--	--	--	--	--
15...	1100	.66	311	7.9	--	--	120	66	28	11	11
15...	1105	.69	--	--	--	--	--	--	--	--	--
15...	1135	1.0	--	--	--	--	--	--	--	--	--
15...	1150	1.4	--	--	--	--	--	--	--	--	--
15...	1155	2.0	--	--	--	--	--	--	--	--	--
15...	1210	2.9	260	7.6	--	--	98	--	24	9.2	8.5
15...	1215	3.3	--	--	--	--	--	--	--	--	--
15...	1220	3.7	--	--	--	--	--	--	--	--	--
15...	1225	5.7	--	--	--	--	--	--	--	--	--
15...	1230	7.0	224	7.4	--	--	81	--	19	8.1	6.8
15...	1255	15	--	--	--	--	--	--	--	--	--
15...	1315	15	--	--	--	--	--	--	--	--	--
15...	1400	14	--	--	--	--	--	--	--	--	--
15...	1455	13	--	--	--	--	--	--	--	--	--
15...	1525	11	--	--	--	--	--	--	--	--	--
15...	1620	7.9	250	7.6	--	--	97	--	23	9.6	6.7
15...	1730	5.6	--	--	--	--	--	--	--	--	--
15...	1755	5.5	--	--	--	--	--	--	--	--	--
15...	2050	5.3	--	--	--	--	--	--	--	--	--
16...	0215	4.0	--	--	--	--	--	--	--	--	--
16...	0455	3.1	--	--	--	--	--	--	--	--	--
16...	0745	2.0	296	7.9	--	--	110	--	26	11	8.6
16...	1240	1.4	--	--	--	--	--	--	--	--	--

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
FEB										
26...	2.0	28	69	14	<.1	6.7	173	.74	<.010	10
MAY										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	2.7	53	67	6.9	--	--	175	--	--	--
16...	2.9	53	68	5.3	--	--	182	--	--	--
16...	2.7	57	70	7.1	--	--	185	--	--	--
16...	2.6	54	57	6.0	--	--	147	--	--	--
16...	2.6	53	40	4.0	--	--	115	--	--	--
16...	2.9	58	38	3.4	--	--	138	--	--	--
16...	2.7	50	41	5.4	--	--	137	--	--	--
25...	2.1	64	75	8.2	--	--	225	--	--	200
SEP										
03...	2.9	66	68	6.0	--	--	194	--	--	--
03...	3.1	64	70	5.9	--	--	197	--	--	--
03...	3.2	58	79	4.3	--	--	211	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
15...	3.4	56	51	4.6	--	--	151	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	3.3	47	44	5.5	--	--	147	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	3.1	46	52	10	--	--	158	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	3.0	54	68	11	--	--	183	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	3.4	50	52	9.0	--	--	153	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	2.9	54	35	7.4	--	--	125	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	3.0	42	57	6.2	--	--	151	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	3.1	46	70	7.8	--	--	182	--	--	--
16...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, DISSOLVED (UG/L AS ZN)	SEDIMENT, SUSPENDED (MG/L)
FEB											
26...	50	2	<1	330	20	<1	40	40	160	4	--
MAY											
20...	--	--	--	--	--	--	--	--	--	--	83
AUG											
15...	--	--	--	910	10	--	110	<1	--	--	--
16...	--	--	--	4700	30	--	250	<1	--	--	--
16...	--	--	--	1100	30	--	80	<1	--	--	--
16...	--	--	--	30000	30	--	1300	<1	--	--	--
16...	--	--	--	29000	60	--	1400	<1	--	--	--
16...	--	--	--	24000	30	--	2300	<1	--	--	--
16...	--	--	--	27000	60	--	1800	<1	--	--	--
25...	--	--	--	350	20	--	50	20	--	--	--
SEP											
03...	--	--	--	4700	10	--	200	10	--	--	--
03...	--	--	--	3500	30	--	260	<10	--	--	--
03...	--	--	--	12000	20	--	380	<10	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	12
06...	--	--	--	--	--	--	--	--	--	--	787
06...	--	--	--	--	--	--	--	--	--	--	760
06...	--	--	--	--	--	--	--	--	--	--	933
06...	--	--	--	--	--	--	--	--	--	--	870
06...	--	--	--	--	--	--	--	--	--	--	1280
06...	--	--	--	--	--	--	--	--	--	--	820
15...	--	--	--	11000	70	--	330	<10	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	252
15...	--	--	--	--	--	--	--	--	--	--	494
15...	--	--	--	--	--	--	--	--	--	--	538
15...	--	--	--	--	--	--	--	--	--	--	940
15...	--	--	--	19000	60	--	640	10	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	959
15...	--	--	--	27000	40	--	1100	<10	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	549
15...	--	--	--	--	--	--	--	--	--	--	378
15...	--	--	--	--	--	--	--	--	--	--	362
15...	--	--	--	--	--	--	--	--	--	--	208
15...	--	--	--	--	--	--	--	--	--	--	166
15...	--	--	--	3600	30	--	110	<10	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	168
15...	--	--	--	--	--	--	--	--	--	--	180
15...	--	--	--	--	--	--	--	--	--	--	256
15...	--	--	--	--	--	--	--	--	--	--	282
15...	--	--	--	11000	60	--	580	20	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	536
15...	--	--	--	--	--	--	--	--	--	--	507
15...	--	--	--	--	--	--	--	--	--	--	1540
15...	--	--	--	43000	50	--	2000	10	--	--	2070
15...	--	--	--	--	--	--	--	--	--	--	4170
15...	--	--	--	--	--	--	--	--	--	--	1940
15...	--	--	--	--	--	--	--	--	--	--	1060
15...	--	--	--	--	--	--	--	--	--	--	562
15...	--	--	--	--	--	--	--	--	--	--	368
15...	--	--	--	7900	70	--	370	<10	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	196
15...	--	--	--	--	--	--	--	--	--	--	274
15...	--	--	--	--	--	--	--	--	--	--	83
16...	--	--	--	--	--	--	--	--	--	--	36
16...	--	--	--	--	--	--	--	--	--	--	65
16...	--	--	--	1500	30	--	80	<10	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	26

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
DEC												
22...	1200	1.3	398	7.3	--	--	130	89	31	13	21	2.4
22...	2315	2.6	348	7.5	--	--	110	80	26	12	20	2.3
23...	1435	3.0	306	7.5	--	--	110	76	25	11	15	2.5
24...	0915	1.6	308	7.6	--	--	110	77	25	12	16	2.1
24...	1510	1.3	311	7.7	--	--	110	80	26	12	15	2.2
31...	1440	1.3	283	7.6	--	--	110	62	24	11	11	3.7
JAN												
03...	0015	1.3	278	7.7	--	--	99	55	23	10	11	1.8
03...	0310	4.5	284	7.6	--	--	95	48	20	11	16	1.6
03...	0500	17	217	7.3	--	--	70	38	15	7.9	12	1.5
04...	0315	8.7	232	7.4	--	--	81	50	18	8.8	11	2.4
04...	0415	17	203	7.5	--	--	72	43	16	7.8	9.0	1.8
04...	1315	20	207	7.3	--	--	70	40	16	7.4	8.8	1.7
FEB												
03...	0135	9.7	207	7.3	--	--	70	46	16	7.3	8.5	1.6
03...	0605	30	187	7.1	--	--	65	39	14	7.3	6.1	2.1
03...	1330	23	157	7.2	7.0	10.9	49	35	11	5.3	4.7	1.8
04...	0620	9.1	180	7.3	--	--	63	41	14	6.7	5.9	1.9
MAY												
31...	2005	2.9	172	7.1	--	--	79	.00	19	7.6	15	1.9
31...	2008	4.9	205	7.2	--	--	79	18	19	7.6	15	1.0
31...	2010	9.7	209	7.5	--	--	76	.00	18	7.6	15	.6
JUN												
01...	1410	20	195	7.6	15.5	--	69	43	16	7.1	5.7	1.8
01...	1525	9.7	193	7.5	--	--	65	38	15	6.8	5.1	2.0
AUG												
09...	1130	.58	302	8.0	20.0	--	120	58	28	12	9.7	2.6
24...	1400	.12	360	8.2	19.5	7.9	140	70	33	14	12	2.5
SEP												
14...	0755	1.6	232	7.1	--	--	95	37	23	9.1	8.0	3.8
14...	0815	3.1	219	7.2	--	--	89	23	22	8.3	8.1	3.2
14...	0832	4.3	206	7.4	--	--	80	12	20	7.3	5.8	4.3
14...	0855	7.5	202	7.4	--	--	77	12	19	7.1	5.6	3.8
14...	0915	9.2	202	7.4	--	--	75	15	19	6.7	5.3	2.6
14...	0935	16	186	7.5	--	--	60	25	15	5.5	4.8	3.4
14...	0950	34	150	7.4	--	--	51	19	13	4.5	3.3	2.0
14...	1548	3.6	293	7.6	--	--	97	54	23	9.7	7.2	8.2
15...	1016	1.3	290	7.7	--	--	120	66	28	11	8.1	2.6

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
DEC												
22...	42	68	44	--	--	267	--	--	--	--	--	--
22...	34	66	37	--	--	245	--	--	--	--	--	--
23...	32	67	26	--	--	213	--	--	--	--	--	--
24...	35	69	22	--	--	211	--	--	--	--	--	--
24...	34	69	19	--	--	207	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
31...	43	57	17	--	--	150	--	--	--	--	--	--
JAN												
03...	44	60	14	--	--	157	--	--	--	--	--	--
03...	47	46	24	--	--	150	--	--	--	--	--	--
03...	32	40	13	--	--	126	--	--	--	--	--	--
04...	31	55	11	--	--	130	--	--	--	--	--	--
04...	29	45	11	--	--	115	--	--	--	--	--	--
04...	30	43	9.4	--	--	110	--	--	--	--	--	--
FEB												
03...	24	51	14	--	--	128	--	--	--	--	--	--
03...	26	43	8.5	--	--	114	--	--	--	--	--	--
03...	14	40	6.4	<.1	5.8	99	.070	--	1	1	1	10
04...	22	40	7.1	--	--	113	--	--	--	--	--	--
MAY												
31...	86	35	4.4	--	--	112	--	--	--	--	--	--
31...	61	39	5.5	--	--	140	--	--	--	--	--	--
31...	106	33	5.1	--	--	135	--	--	--	--	--	--
JUN												
01...	26	38	6.4	<.1	7.3	121	.060	--	--	--	--	--
01...	27	39	6.4	--	--	127	--	--	--	--	--	--
AUG												
09...	61	72	6.4	<.1	6.6	200	.080	--	--	--	--	--
24...	70	89	5.5	--	8.0	214	--	100	--	--	--	--
SEP												
14...	58	57	4.8	--	5.0	164	--	<100	--	--	--	--
14...	66	57	4.1	--	3.8	135	--	200	--	--	--	--
14...	68	34	3.9	--	3.5	106	--	200	--	--	--	--
14...	65	35	2.8	--	3.5	117	--	200	--	--	--	--
14...	60	34	4.9	--	3.7	124	--	400	--	--	--	--
14...	35	30	4.9	--	3.5	96	--	400	--	--	--	--
14...	32	26	2.8	--	--	81	--	--	--	--	--	--
14...	43	52	10	--	--	154	--	--	--	--	--	--
15...	49	70	5.4	--	--	181	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC												
22...	--	--	6500	16	--	--	290	23	--	--	--	--
22...	--	--	4600	20	--	--	250	<1	--	--	--	--
23...	--	--	1900	18	--	--	140	<1	--	--	--	--
24...	--	--	1700	8	--	--	130	<1	--	--	--	--
24...	--	--	660	16	--	--	50	<1	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	2900	2800	--	--	700	430	--	--	--	--
JAN												
03...	--	--	38000	54	--	--	860	3	--	--	--	--
03...	--	--	36000	88	--	--	1700	4	--	--	--	--
03...	--	--	39000	110	--	--	2300	4	--	--	--	--
04...	--	--	3900	21	--	--	230	5	--	--	--	--
04...	--	--	25000	90	--	--	790	7	--	--	--	--
04...	--	--	21000	75	--	--	1200	4	--	--	--	--
FEB												
03...	--	--	5300	64	--	--	130	4	--	--	--	--
03...	--	--	51000	4300	--	--	2900	280	--	--	--	--
03...	9	7	6300	75	5	2	340	14	<.1	<1	70	10
04...	--	--	1100	35	--	--	90	5	--	--	--	--
MAY												
31...	--	--	260000	120	--	--	6700	1300	--	--	--	--
31...	--	--	960000	420	--	--	31000	600	--	--	--	--
31...	--	--	680000	180	--	--	15000	380	--	--	--	--
JUN												
01...	--	--	2500	31	--	--	120	20	--	--	--	--
01...	--	--	4400	26	--	--	160	5	--	--	--	--
AUG												
09...	--	--	28000	54	--	--	490	42	--	--	--	--
24...	--	--	360	23	--	--	30	19	--	--	--	--
SEP												
14...	--	--	25000	89	--	--	1100	3	--	--	--	--
14...	--	--	56000	190	--	--	2100	7	--	--	--	--
14...	--	--	59000	200	--	--	2600	9	--	--	--	--
14...	--	--	86000	100	--	--	3300	13	--	--	--	--
14...	--	--	100000	470	--	--	4200	22	--	--	--	--
14...	--	--	110000	580	--	--	4600	52	--	--	--	--
14...	--	--	170000	160	--	--	4600	92	--	--	--	--
14...	--	--	1500	60	--	--	80	29	--	--	--	--
15...	--	--	640	19	--	--	50	33	--	--	--	--

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), JULY TO SEPTEMBER 1981

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1				---	---	---	339	331	335	323	317	320
2				---	---	---	337	277	327	336	317	327
3				---	---	---	340	334	337	331	310	326
4				---	---	---	342	336	339	336	321	329
5				---	---	---	354	338	343	338	331	333
6				---	---	---	344	241	305	335	276	326
7				---	---	---	324	267	306	340	331	335
8				---	---	---	307	277	295	331	318	326
9				---	---	---	320	306	312	329	323	326
10				---	---	---	324	314	318	330	321	325
11				---	---	---	324	315	318	331	321	325
12				---	---	---	319	308	314	331	321	325
13				---	---	---	313	303	308	329	320	324
14				---	---	---	316	302	307	326	318	322
15				---	---	---	316	295	306	316	246	278
16				---	---	---	307	261	297	315	292	306
17				---	---	---	315	303	309	322	316	320
18				326	320	323	318	306	310	323	320	321
19				332	323	327	315	307	310	322	319	321
20				342	269	325	321	309	313	326	318	322
21				332	326	329	317	311	314	328	320	324
22				330	326	328	320	309	314	334	322	328
23				334	326	330	321	313	316	335	330	332
24				367	283	332	321	313	315	330	326	328
25				335	328	332	321	311	315	332	325	328
26				340	331	335	322	309	315	333	327	330
27				348	335	339	322	314	317	335	329	332
28				346	163	323	324	314	318	336	332	334
29				347	328	335	323	314	318	333	329	331
30				334	327	330	326	315	319	335	329	332
31				336	330	333	323	316	319	---	---	---
MONTH				367	163	330	354	241	316	340	246	325
YEAR	367	163	322									

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	339	322	332	337	334	336	---	---	---	335	322	328
2	365	335	340	337	332	335	---	---	---	322	315	319
3	335	330	340	339	334	336	---	---	---	293	219	239
4	331	327	329	338	333	336	---	---	---	257	222	245
5	345	271	324	337	311	332	331	319	327	285	244	251
6	338	325	335	336	332	335	338	326	329	258	247	252
7	337	333	335	335	324	328	343	323	326	270	248	262
8	335	331	333	326	323	325	324	322	323	264	257	260
9	334	330	332	358	325	329	321	313	318	258	255	257
10	335	332	334	346	327	330	319	310	315	271	256	265
11	336	333	335	330	325	328	319	311	316	272	266	270
12	335	332	334	---	---	---	333	313	319	274	270	272
13	335	330	333	---	---	---	342	313	324	276	271	274
14	334	328	331	---	---	---	330	261	293	285	278	281
15	334	330	331	---	---	---	352	332	340	288	284	286
16	335	332	334	---	---	---	335	318	329	297	288	290
17	336	331	334	---	---	---	342	282	318	309	298	303
18	335	324	332	---	---	---	351	338	345	300	292	296
19	334	331	333	---	---	---	348	333	337	295	222	253
20	331	326	329	---	---	---	347	332	339	220	204	209
21	329	325	327	---	---	---	343	227	319	219	205	209
22	329	326	327	---	---	---	393	227	335	219	206	212
23	368	276	328	---	---	---	345	303	316	230	219	226
24	354	336	343	---	---	---	306	303	305	232	229	231
25	337	322	335	---	---	---	308	304	306	236	232	234
26	357	294	338	---	---	---	311	305	308	243	237	240
27	358	315	343	---	---	---	313	310	311	252	242	246
28	351	344	345	---	---	---	315	312	313	255	230	250
29	343	340	342	---	---	---	318	315	317	262	257	258
30	341	338	339	---	---	---	320	314	317	269	263	265
31	339	336	338	---	---	---	334	255	310	273	235	265
MONTH	368	271	334	358	311	332	393	227	321	335	204	260

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	254	236	242	223	176	201	306	248	268	235	226	231
2	241	228	236	229	222	226	298	248	260	244	236	239
3	224	125	150	238	230	233	289	249	261	252	245	248
4	181	139	158	249	238	239	290	252	265	255	247	252
5	216	177	189	249	231	245	300	254	264	257	252	254
6	264	164	217	246	230	243	278	226	249	262	257	259
7	257	196	221	234	206	215	270	233	254	266	261	263
8	281	182	257	274	207	232	272	263	269	270	256	265
9	277	239	254	234	225	230	273	268	270	274	269	271
10	248	235	243	225	215	219	272	269	270	279	274	276
11	255	248	251	222	220	221	273	271	272	285	278	281
12	258	251	254	233	224	232	277	271	272	289	284	286
13	257	252	255	240	212	234	274	271	273	294	288	290
14	265	257	260	233	226	229	275	273	274	298	294	295
15	270	259	266	226	202	216	276	273	275	302	297	299
16	273	228	252	207	202	204	278	275	276	306	302	303
17	231	169	193	215	205	210	280	265	277	313	307	310
18	172	153	165	227	217	223	281	278	280	314	262	306
19	184	172	179	228	198	222	280	278	279	311	281	302
20	191	185	188	220	193	210	280	270	278	323	311	316
21	196	190	193	199	188	193	282	279	280	320	314	318
22	203	197	200	200	193	196	284	280	282	315	276	296
23	206	203	204	212	199	205	286	282	284	294	282	289
24	209	206	208	227	210	219	286	283	284	302	293	298
25	212	209	210	237	226	229	288	266	282	302	298	300
26	216	212	214	238	235	236	300	239	282	337	288	302
27	237	191	208	242	235	239	276	197	237	298	281	292
28	189	179	182	241	238	239	201	192	196	298	277	292
29	---	---	---	240	238	239	212	196	204	291	288	289
30	---	---	---	266	237	241	225	212	219	295	290	292
31	---	---	---	289	241	259	---	---	---	297	---	---
MONTH	281	125	216	289	176	225	306	192	265	337	226	284

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	313	305	309	303	291	298	322	210	290
2	---	---	---	320	311	314	310	302	305	316	306	311
3	---	---	---	318	309	316	307	302	304	323	316	319
4	---	---	---	321	318	320	309	303	306	340	317	325
5	---	---	---	325	319	321	310	305	308	328	319	326
6	---	---	---	329	324	326	318	306	310	330	321	326
7	---	---	---	331	326	328	353	307	320	343	325	331
8	---	---	---	337	299	325	330	297	317	345	328	333
9	---	---	---	326	316	321	339	282	309	352	332	338
10	---	---	---	348	301	325	314	306	310	342	333	337
11	---	---	---	326	294	320	316	312	314	343	335	339
12	---	---	---	333	320	327	326	313	320	347	338	342
13	---	---	---	334	327	329	328	323	325	348	341	345
14	---	---	---	350	327	335	331	325	328	349	110	268
15	---	---	---	347	341	344	333	327	330	305	274	295
16	---	---	---	348	344	345	334	319	330	323	305	311
17	---	---	---	349	345	347	339	326	336	320	312	315
18	272	262	266	349	343	347	339	334	337	325	314	318
19	278	269	274	367	250	329	341	334	338	323	314	321
20	283	276	279	334	309	326	346	339	342	330	322	324
21	288	283	285	358	334	343	344	339	342	347	324	327
22	288	262	283	347	187	320	345	338	342	331	325	328
23	293	287	290	320	299	314	344	316	340	333	327	330
24	299	293	295	352	319	328	344	334	341	346	330	333
25	304	298	301	352	324	333	331	184	259	338	331	334
26	306	256	298	340	335	337	293	274	285	337	296	326
27	302	256	294	352	325	345	296	291	292	338	333	336
28	305	295	300	352	226	331	296	292	295	342	332	337
29	305	288	301	335	231	307	296	290	294	342	335	339
30	307	277	302	308	275	294	296	291	294	343	335	340
31	---	---	---	300	251	282	319	236	283	---	---	---
MONTH	307	256	290	367	187	325	353	184	315	352	110	325
YEAR	393	110	289									

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), JULY TO SEPTEMBER 1981

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1				---	---	---	22.0	14.5	18.0	23.5	18.0	20.5
2				---	---	---	19.5	16.5	18.0	26.0	18.5	21.5
3				---	---	---	23.0	17.5	19.5	23.0	19.5	20.5
4				---	---	---	24.0	17.5	20.0	23.5	19.0	20.5
5				---	---	---	25.5	18.0	21.0	24.5	19.0	21.0
6				---	---	---	21.0	18.5	19.5	22.0	17.5	19.5
7				---	---	---	22.0	18.0	19.0	23.5	17.5	20.0
8				---	---	---	20.0	17.5	18.5	20.5	16.5	18.5
9				---	---	---	20.0	16.0	18.0	19.0	14.0	16.0
10				---	---	---	21.0	16.0	18.0	21.5	12.5	16.0
11				---	---	---	21.5	16.5	18.5	23.0	13.5	17.5
12				---	---	---	21.5	16.5	18.5	23.5	15.0	18.5
13				---	---	---	21.5	14.5	17.5	23.5	15.0	18.5
14				---	---	---	21.5	14.5	17.5	23.0	15.5	19.0
15				---	---	---	22.5	15.5	18.0	19.0	17.5	18.0
16				---	---	---	22.0	18.0	19.0	17.5	16.0	17.0
17				---	---	---	21.0	17.0	18.5	17.0	14.0	15.5
18				21.0	16.5	18.5	22.0	15.5	18.0	15.0	13.0	13.5
19				23.5	17.0	19.5	21.0	16.0	17.5	15.0	12.0	13.0
20				22.0	17.5	19.0	22.5	14.5	17.5	17.0	11.0	13.5
21				22.0	17.5	18.5	19.0	15.0	16.5	18.0	11.5	14.0
22				21.5	16.5	18.5	22.0	13.0	16.5	19.0	12.5	15.0
23				23.0	15.0	18.5	22.0	14.5	17.5	17.0	11.5	14.5
24				24.0	17.0	19.0	21.5	15.0	18.0	16.0	8.5	12.0
25				22.5	17.0	19.0	22.5	15.0	18.0	16.5	9.5	12.5
26				23.0	17.0	20.0	23.0	14.0	18.0	19.5	11.5	15.0
27				25.5	18.0	21.0	22.5	16.0	18.5	19.5	13.0	15.5
28				22.5	19.0	20.0	24.0	16.5	19.5	18.0	12.0	14.5
29				22.0	16.5	19.0	23.0	16.0	19.0	17.0	9.5	12.5
30				21.5	14.5	17.5	24.0	17.0	20.0	19.0	11.0	14.0
31				22.5	16.0	18.5	23.0	17.0	19.5	---	---	---
MONTH				25.5	14.5	19.0	25.5	13.0	18.5	26.0	8.5	16.5
YEAR	26.0	8.5	18.0									

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.0	12.0	15.5	13.5	7.5	10.0	---	---	---	6.0	4.0	5.0
2	15.5	8.5	12.0	14.5	8.5	11.0	---	---	---	4.5	2.5	3.5
3	14.5	8.5	10.0	14.5	9.0	11.5	---	---	---	8.0	4.0	6.0
4	16.0	7.0	11.0	15.0	9.5	12.0	---	---	---	8.5	5.5	7.5
5	14.5	9.0	11.0	14.5	10.5	12.0	4.0	1.5	3.0	5.5	4.5	5.0
6	16.5	11.0	13.5	12.5	7.5	10.0	2.0	.0	1.0	6.5	4.5	5.5
7	14.5	9.0	11.5	8.5	4.0	6.5	5.0	.5	3.0	8.0	5.0	6.5
8	14.0	7.0	9.5	9.0	3.0	5.5	5.0	2.0	4.0	4.5	3.0	3.5
9	14.0	6.5	10.0	11.0	4.5	7.5	1.5	.0	.5	3.0	.0	2.0
10	12.0	9.5	11.0	11.5	6.0	8.0	.0	.0	.0	.0	.0	.0
11	16.0	11.5	13.0	9.5	4.5	6.0	.5	.0	.0	.0	.0	.0
12	15.5	10.0	12.5	---	---	---	.5	.0	.0	1.0	.0	.5
13	16.0	8.0	11.0	---	---	---	.0	.0	.0	2.0	1.0	1.5
14	15.5	6.5	10.0	---	---	---	4.0	.0	1.5	2.0	1.0	1.5
15	14.0	9.0	11.5	---	---	---	4.0	2.0	3.0	1.5	1.0	1.0
16	16.0	11.5	13.0	---	---	---	2.5	1.0	1.5	2.0	.0	1.5
17	17.5	9.5	13.0	---	---	---	4.0	1.0	2.5	.0	.0	.0
18	15.0	10.5	13.0	---	---	---	3.0	.0	1.5	.5	.0	.0
19	12.0	6.0	9.0	---	---	---	.0	.0	.0	3.5	.0	1.5
20	13.5	4.5	8.0	---	---	---	.0	.0	.0	5.5	3.5	5.0
21	14.5	5.0	9.0	---	---	---	.0	.0	.0	6.5	5.5	6.0
22	14.0	8.0	11.0	---	---	---	4.5	.0	1.5	6.5	5.5	6.0
23	12.0	8.0	10.5	---	---	---	5.5	5.0	5.5	7.5	4.0	6.5
24	10.5	6.0	8.0	---	---	---	5.0	4.5	4.5	4.0	2.0	2.5
25	11.5	6.5	9.0	---	---	---	4.5	2.5	4.0	4.0	2.0	3.0
26	14.0	11.0	12.5	---	---	---	5.5	2.5	4.0	1.5	.0	.5
27	14.0	11.5	12.5	---	---	---	5.5	3.0	4.0	2.0	.0	.5
28	12.5	9.5	11.0	---	---	---	7.0	2.5	4.5	3.5	1.5	2.5
29	14.0	8.5	10.5	---	---	---	5.5	2.0	3.5	3.5	.0	1.5
30	14.0	8.5	10.5	---	---	---	1.5	.0	.5	6.0	2.5	4.0
31	13.5	8.0	10.0	---	---	---	4.5	.0	2.5	8.0	4.5	6.0
MONTH	20.0	4.5	11.0	15.0	3.0	9.0	7.0	.0	2.0	8.5	.0	3.0

		FEBRUARY			MARCH			APRIL			MAY	
1	5.0	3.5	4.0	8.5	5.5	6.5	14.0	6.5	9.5	14.5	9.0	11.5
2	5.5	3.5	4.5	9.0	5.0	6.5	14.5	6.0	10.0	14.5	10.0	11.5
3	7.5	5.5	6.5	7.5	6.5	7.0	15.0	7.0	11.5	17.0	9.5	12.5
4	7.0	5.5	6.0	11.5	6.5	8.5	12.5	6.0	8.5	18.0	9.0	13.0
5	7.5	5.0	6.0	8.5	6.5	7.5	12.0	6.0	8.5	18.5	10.0	13.5
6	6.5	2.5	4.5	8.5	6.0	7.0	9.0	3.0	5.5	19.0	11.0	14.5
7	4.0	1.0	2.5	7.0	4.5	5.5	10.0	2.5	5.5	16.5	12.0	14.5
8	5.0	1.0	3.0	6.5	4.0	5.0	8.0	4.5	6.0	15.0	11.5	13.5
9	6.0	4.0	5.0	8.5	5.0	6.0	7.0	5.0	6.0	17.5	10.0	13.0
10	4.5	3.0	3.5	9.5	5.5	7.0	11.5	4.5	7.0	18.0	10.0	14.0
11	5.5	3.0	4.0	10.0	6.0	8.0	10.0	4.0	7.0	19.0	11.0	14.5
12	5.0	2.5	4.0	11.5	7.5	9.5	15.0	5.5	10.0	19.5	11.5	15.0
13	4.0	2.0	3.5	10.5	7.0	9.0	15.0	9.0	11.0	19.5	12.5	15.5
14	5.5	1.5	3.0	9.0	6.0	7.5	15.5	9.0	11.5	20.0	13.0	16.0
15	6.5	3.0	5.0	10.0	7.5	8.5	18.0	8.0	13.0	19.0	13.0	16.0
16	7.5	5.5	6.5	11.0	8.0	9.5	17.0	11.5	14.0	19.0	13.5	16.0
17	8.0	6.5	7.5	13.5	9.0	10.5	15.0	10.5	13.0	20.0	14.0	16.5
18	8.0	6.5	7.0	13.5	7.5	10.0	17.0	8.0	11.5	19.5	14.0	16.5
19	7.0	5.0	6.5	12.0	9.0	10.5	14.0	8.5	11.0	18.0	15.0	16.5
20	8.5	5.0	6.5	12.0	10.0	11.0	15.5	9.5	12.0	18.5	14.0	16.0
21	7.5	5.0	6.5	11.5	9.0	10.5	15.5	9.0	12.5	19.5	15.0	17.0
22	6.0	4.0	5.0	11.0	7.5	9.0	14.5	7.5	10.0	20.5	15.0	17.5
23	8.5	3.5	5.5	11.5	7.0	8.5	16.0	5.0	10.0	20.5	16.0	18.0
24	11.0	6.0	8.0	12.0	6.5	9.0	16.5	5.5	10.5	18.5	16.0	17.0
25	7.0	4.0	5.0	13.5	7.5	10.0	14.0	7.5	10.5	21.0	15.0	17.5
26	6.0	3.0	4.0	8.0	5.5	7.0	18.0	10.5	13.5	19.0	15.5	17.0
27	6.0	3.5	5.0	7.0	3.5	5.0	13.5	10.5	12.0	20.0	15.5	17.0
28	7.5	5.0	6.0	10.0	2.5	5.5	13.5	10.0	11.0	19.0	16.0	17.0
29	---	---	---	11.5	3.5	7.0	14.0	8.5	11.0	21.0	15.0	17.5
30	---	---	---	13.5	6.5	10.0	16.0	8.5	11.5	21.5	17.0	18.5
31	---	---	---	14.5	9.0	10.5	---	---	---	22.0	16.5	18.5
MONTH	11.0	1.0	5.0	14.5	2.5	8.0	18.0	2.5	10.0	22.0	9.0	15.5

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	21.0	16.0	17.5	21.5	18.0	19.5	18.5	17.5	18.0
2	---	---	---	21.0	14.0	17.0	21.5	17.0	19.0	19.0	17.0	18.0
3	---	---	---	22.5	16.5	18.5	21.5	16.5	19.0	20.5	16.5	18.0
4	---	---	---	22.5	17.5	19.0	23.0	17.5	19.5	19.0	14.0	16.0
5	---	---	---	23.0	16.0	19.0	20.0	18.5	19.0	19.5	12.5	15.5
6	---	---	---	23.0	17.0	19.5	24.5	18.5	20.5	19.5	13.0	16.0
7	---	---	---	23.0	17.5	19.5	23.5	18.5	20.5	20.5	13.5	16.5
8	---	---	---	22.5	17.5	19.5	24.5	19.0	20.5	19.0	15.0	16.5
9	---	---	---	22.0	17.5	19.5	20.5	19.0	19.5	21.0	15.0	17.5
10	---	---	---	24.0	17.5	20.0	23.0	18.0	20.0	21.5	14.0	17.0
11	---	---	---	24.0	18.5	20.5	22.0	17.0	19.0	21.5	14.0	17.0
12	---	---	---	23.0	18.5	20.5	20.5	16.5	18.5	21.5	15.5	18.0
13	---	---	---	21.5	18.0	19.5	21.0	14.5	17.5	21.0	16.5	18.5
14	---	---	---	24.0	18.0	20.5	23.0	15.5	18.5	19.0	17.5	18.0
15	---	---	---	24.0	18.0	20.5	23.0	15.5	18.5	19.0	17.0	17.5
16	---	---	---	24.5	18.5	21.0	20.0	16.5	18.0	19.5	16.5	18.0
17	---	---	---	25.0	18.5	21.5	22.5	16.5	19.0	19.5	15.5	17.0
18	20.0	14.5	17.0	23.0	19.5	21.0	22.0	16.5	18.5	18.5	14.5	16.5
19	20.0	15.0	17.0	23.0	19.0	20.5	23.5	15.0	18.5	18.5	16.0	17.0
20	20.0	16.0	17.5	23.0	19.5	21.0	22.5	15.5	19.0	17.0	14.0	16.0
21	19.5	14.0	16.5	24.5	19.5	21.5	23.0	16.5	19.0	15.5	13.0	14.0
22	19.0	15.5	17.0	25.0	19.0	21.0	22.5	13.5	17.5	14.0	11.0	13.0
23	20.0	15.5	17.5	23.0	19.5	20.5	20.5	15.0	17.5	15.5	9.5	12.0
24	20.5	14.0	17.0	24.0	19.5	21.0	22.0	17.0	19.0	14.0	10.0	12.0
25	20.5	15.0	17.5	24.5	18.5	21.0	19.5	17.0	18.5	15.0	11.0	13.0
26	20.5	16.0	18.0	24.5	19.0	21.5	20.5	15.0	17.5	13.5	12.5	13.0
27	20.5	16.5	18.0	25.0	19.0	21.5	19.5	16.0	17.5	16.0	12.5	14.0
28	20.5	16.5	18.0	25.5	19.5	21.0	21.0	17.0	18.5	16.0	11.0	13.5
29	21.0	17.0	18.5	22.5	19.5	20.5	21.0	15.0	17.5	17.0	11.0	13.5
30	20.5	17.0	18.5	22.0	19.0	20.0	19.5	15.5	17.5	18.5	12.0	14.5
31	---	---	---	19.5	18.5	19.0	18.5	17.5	18.0	---	---	---
MONTH	21.0	14.0	17.5	25.5	14.0	20.0	24.5	13.5	18.5	21.5	9.5	16.0
YEAR	25.5	.0	11.5									

03208040 RUSSELL FORK AT COUNCIL, VA

LOCATION.--Lat 37°04'41", long 82°03'56", Buchanan County, Hydrologic Unit 05070202, on left bank 50 ft (15 m) upstream from bridge on State Highway 80, 750 ft (229 m) downstream from Ball Creek, 0.6 mi (1.0 km) southeast of Council, and 4.7 mi (7.6 km) upstream from Hurricane Creek.

DRAINAGE AREA.--10.2 mi² (26.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,680 ft (512 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260 ft³/s (7.36 m³/s) Sept. 14, 1982, gage height, 2.60 ft (0.792 m), from rating curve extended above 140 ft³/s (4.0 m³/s); minimum, 0.22 ft³/s (0.006 m³/s) Sept. 13-15, 1981; minimum gage height, 0.63 ft (0.192 m) Sept. 13-15, Oct. 1, 1981.

EXTREMES FOR PERIOD JUNE 1981 TO SEPTEMBER 1982.--Peak discharges above base of 150 ft³/s (4.2 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Feb. 3, 1982	0900	231	6.54	2.47	0.753	June 13, 1982	0500	161	4.56	2.10	0.640
May 31, 1982	2130	157	4.45	2.09	.637	Sept. 14, 1982	1030	*260	7.36	2.60	.792

June to September 1981: Minimum discharge, 0.22 ft³/s (0.006 m³/s) Sept. 13-15, gage height, 0.63 ft (0.192 m).

Water year 1982: Minimum discharge, 0.27 ft³/s (0.008 m³/s) Oct. 1, 14, 15, 20-23; minimum gage height, 0.63 ft (0.192 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	6.7	.80	.34
2									---	4.3	1.3	.30
3									---	2.4	1.2	.30
4									---	2.2	.89	.71
5									---	1.9	.79	.49
6									---	2.5	5.9	.73
7									---	2.0	7.9	.64
8									---	1.5	16	.52
9									---	1.3	5.1	.64
10									---	1.2	3.2	.39
11									---	1.2	2.5	.28
12									---	1.0	2.1	.27
13									---	.92	1.6	.27
14									---	2.2	1.2	.22
15									---	1.7	1.2	12
16									---	5.2	3.3	9.7
17									---	2.8	1.6	3.3
18									3.9	1.8	1.2	2.1
19									3.7	1.4	1.1	2.0
20									3.5	2.4	.92	1.5
21									3.4	2.1	.80	1.1
22									2.9	1.5	.77	.83
23									2.4	1.2	.69	.75
24									2.1	1.2	.62	.60
25									2.7	1.2	.55	.50
26									2.5	.92	.49	.46
27									1.8	.78	.49	.42
28									1.5	2.4	.47	.38
29									1.3	2.6	.40	.35
30									1.3	1.3	.34	.32
31									---	.96	.34	---
TOTAL	---	---	---	---	---	---	---	---	---	62.78	65.76	42.41
MEAN	---	---	---	---	---	---	---	---	---	2.03	2.12	1.41
MAX	---	---	---	---	---	---	---	---	---	6.7	16	12
MIN	---	---	---	---	---	---	---	---	---	.78	.34	.22
CFSM	---	---	---	---	---	---	---	---	---	.20	.21	.14
IN.	---	---	---	---	---	---	---	---	---	.23	.24	.15

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	1.4	1.9	8.1	24	38	10	18	74	4.6	4.0	8.1
2	.88	1.3	1.8	7.2	23	28	9.3	15	52	4.0	2.6	6.3
3	.58	1.1	1.3	67	128	22	8.6	12	28	3.7	1.9	3.8
4	.49	.97	1.5	72	56	19	8.0	10	46	3.7	1.6	2.7
5	1.1	.94	1.8	33	34	19	7.6	9.2	88	3.6	1.3	2.0
6	.87	1.0	1.5	17	25	17	7.9	8.3	46	3.0	1.2	1.5
7	.58	.92	1.4	18	19	54	6.5	8.1	26	2.8	1.0	1.3
8	.49	.91	1.2	18	16	53	6.3	9.4	28	3.1	1.1	1.2
9	.49	.70	1.1	15	43	42	6.9	7.7	47	3.0	2.5	1.1
10	.44	.58	1.0	9.8	48	40	6.2	7.4	83	2.7	1.7	.92
11	.41	.52	.80	6.3	34	34	6.1	6.9	48	2.5	1.2	.88
12	.41	.45	.74	7.0	26	29	6.1	6.5	33	2.3	1.0	.76
13	.41	.36	1.0	6.2	23	28	6.1	6.1	121	2.1	.90	.69
14	.33	.45	2.9	5.6	19	27	5.9	5.3	57	1.9	.78	41
15	.28	.52	6.9	5.0	19	41	5.4	4.6	32	1.6	.67	15
16	.37	.58	6.8	3.7	42	48	4.8	4.3	22	1.5	1.7	7.4
17	.35	.68	7.4	2.8	96	36	5.0	3.9	18	1.3	2.2	4.5
18	.46	.63	8.1	3.2	85	26	5.1	7.1	13	1.2	1.1	3.3
19	.54	.58	5.9	6.0	58	30	4.4	24	10	2.6	.84	3.0
20	.34	1.4	4.6	30	39	48	4.9	21	8.7	2.9	.64	2.5
21	.27	.98	4.5	55	34	61	4.7	11	7.3	1.7	.62	2.0
22	.27	.71	16	44	26	48	4.3	8.1	7.8	3.8	.56	1.8
23	3.5	.59	21	30	22	34	4.0	8.4	6.1	3.2	.56	1.6
24	1.9	1.9	15	22	20	24	3.7	8.4	4.6	1.9	.85	1.4
25	1.1	1.8	10	18	16	21	3.8	6.6	4.2	1.6	11	1.4
26	2.4	1.6	7.2	13	14	19	7.4	6.0	7.0	1.3	3.3	1.7
27	3.4	1.4	6.1	12	49	15	15	6.9	9.1	1.2	1.9	2.3
28	3.0	1.3	4.4	8.9	59	13	51	8.4	7.9	2.1	1.5	1.2
29	2.1	1.2	3.5	7.5	---	12	36	9.1	6.2	3.7	1.2	1.1
30	1.7	1.1	2.8	7.1	---	12	23	7.6	5.4	4.0	1.1	.92
31	1.5	---	5.8	14	---	12	---	24	---	7.2	6.5	---
TOTAL	31.46	28.57	155.94	572.4	1097	950	284.0	299.3	946.3	85.8	59.02	123.37
MEAN	1.01	.95	5.03	18.5	39.2	30.6	9.47	9.65	31.5	2.77	1.90	4.11
MAX	3.5	1.9	21	72	128	61	51	24	121	7.2	11	41
MIN	.27	.36	.74	2.8	14	12	3.7	3.9	4.2	1.2	.56	.69
CFSM	.10	.09	.49	1.81	3.84	3.00	.93	.95	3.09	.27	.19	.40
IN.	.11	.10	.57	2.09	4.00	3.46	1.04	1.09	3.45	.31	.22	.45

WTR YR 1982 TOTAL 4633.16 MEAN 12.7 MAX 128 MIN .27 CFSM 1.25 IN 16.90

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, February 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1981 to January 1983.

INSTRUMENTATION.--Water-quality monitor since June 18, 1981. Automatic pumping sampler since Aug. 14, 1981.

REMARKS.--Unpublished records of specific conductance and dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR JUNE 1981 TO JANUARY 1983.--
WATER TEMPERATURES: June to September 1981: Maximum recorded during period, 29.0°C July 11; minimum recorded, 10.5°C Sept. 24.

Water year 1982: Maximum recorded, 28.5°C Aug. 6; minimum recorded, 0.0°C on several days during January and February.

October 1982 to January 1983: Maximum recorded during period, 19.5°C Oct. 2; minimum recorded, 0.0°C Dec. 12-14, Jan. 4.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
FEB											
26...	1115	11	160	7.5	6.0	--	54	--	12	5.8	5.3
AUG											
15...	1545	1.0	293	8.1	--	--	120	56	27	13	10
16...	0400	3.1	232	7.8	--	--	96	39	22	10	8.0
16...	0915	4.1	242	7.9	--	--	100	46	24	10	8.7
16...	1545	2.6	242	8.1	--	--	100	46	24	10	9.3
17...	1545	1.4	242	8.2	--	--	120	53	27	12	10
18...	1545	1.0	273	8.4	--	--	120	54	27	12	10
21...	1015	.80	325	8.2	--	--	130	47	29	14	10
23...	1015	.69	332	8.3	--	--	130	47	31	13	11
24...	1015	.58	320	8.1	22.0	7.2	120	47	30	12	12
25...	1015	.58	339	8.3	--	--	140	60	32	15	12
27...	1015	.49	--	--	--	--	--	--	--	--	--
29...	1015	.41	352	8.2	--	--	150	66	35	16	13
31...	1015	.34	367	8.1	--	--	160	62	36	16	13
SEP											
04...	1100	.92	352	8.2	--	--	140	--	34	14	12
06...	1100	.33	352	8.3	--	--	150	--	35	14	12
09...	1100	.58	352	8.3	--	--	140	--	33	14	12
15...	1630	46	173	7.6	--	--	70	31	15	7.8	4.6
16...	0645	12	236	8.0	--	--	94	41	21	10	6.8
21...	1100	1.2	315	8.1	--	--	130	61	30	14	9.2

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	BARIUM, DISSOLVED (UG/L AS BA)
FEB											
26...	1.6	21	32	7.7	<.1	6.8	98	.91	.030	20	40
AUG											
15...	2.5	65	56	9.8	--	--	163	--	--	--	--
16...	3.0	57	36	9.9	--	--	170	--	--	--	--
16...	3.0	59	40	9.5	--	--	151	--	--	--	--
16...	3.0	61	36	9.4	--	--	151	--	--	--	--
17...	2.7	64	42	9.7	--	--	180	--	--	--	--
18...	2.7	69	44	9.6	--	--	182	--	--	--	--
21...	2.7	83	53	9.1	--	--	188	--	--	--	--
23...	2.6	84	56	15	--	--	198	--	--	--	--
24...	2.6	77	67	11	--	--	201	--	--	200	--
25...	2.7	82	57	11	--	--	188	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
29...	3.2	87	60	9.9	--	--	213	--	--	--	--
31...	3.0	94	62	9.9	--	--	215	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	3.9	83	69	11	--	--	213	--	--	--	--
06...	2.9	87	64	10	--	--	208	--	--	--	--
09...	2.9	86	61	10	--	--	210	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	2.7	39	30	5.3	--	--	108	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	2.5	53	40	7.9	--	--	135	--	--	--	--
21...	2.1	71	55	8.9	--	--	179	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	STRONTIUM, DISSOLVED (UG/L AS SR)	ZINC, DISSOLVED (UG/L AS ZN)	SEDIMENT, SUSPENDED (MG/L)
FEB										
26...	<1	1	200	40	<1	20	20	60	10	--
AUG										
15...	--	--	2100	40	--	140	1	--	--	--
16...	--	--	1600	30	--	160	<1	--	--	--
16...	--	--	6100	30	--	250	<1	--	--	--
16...	--	--	970	<10	--	60	<1	--	--	--
17...	--	--	410	60	--	40	<1	--	--	--
18...	--	--	280	70	--	30	2	--	--	--
21...	--	--	750	30	--	80	10	--	--	--
23...	--	--	720	40	--	70	60	--	--	--
24...	--	--	420	70	--	70	50	--	--	--
25...	--	--	840	30	--	70	50	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
29...	--	--	790	30	--	90	<10	--	--	--
31...	--	--	1000	30	--	100	<10	--	--	--
SEP										
04...	--	--	--	--	--	--	--	--	--	34
04...	--	--	650	30	--	90	10	--	--	--
06...	--	--	710	40	--	80	<10	--	--	--
09...	--	--	1100	60	--	120	<10	--	--	--
15...	--	--	--	--	--	--	--	--	--	252
15...	--	--	--	--	--	--	--	--	--	338
15...	--	--	19000	50	--	680	<10	--	--	689
15...	--	--	--	--	--	--	--	--	--	617
16...	--	--	2800	30	--	120	<10	--	--	--
21...	--	--	480	70	--	60	20	--	--	--

< Actual value is known to be less than the value shown.

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT											
01...	1355	.34	365	7.8	--	--	150	65	34	15	14
14...	0915	.41	362	8.2	--	--	140	56	34	14	14
20...	1340	.33	349	7.8	--	--	140	50	31	14	16
28...	1510	2.6	263	8.1	--	--	110	--	26	11	11
NOV											
09...	1220	.69	303	7.9	8.0	--	120	41	27	12	14
DEC											
30...	1330	3.4	227	7.4	--	--	85	45	19	9.0	11
JAN											
03...	0400	52	188	7.4	--	--	64	16	15	6.4	8.9
03...	0530	108	180	7.4	--	--	62	10	14	6.5	7.6
03...	0635	125	148	7.4	--	--	54	25	12	5.8	5.4
03...	0720	125	150	7.3	--	--	55	17	11	6.8	8.7
19...	1300	46	166	7.3	--	--	47	27	11	4.7	10
19...	1410	100	160	7.2	--	--	43	24	9.9	4.4	9.3
19...	1510	107	164	7.3	--	--	48	25	11	4.9	9.1
19...	1535	50	159	7.4	--	--	44	23	10	4.6	9.1
FEB											
03...	0645	180	118	7.1	--	--	45	19	9.9	4.9	3.9
03...	0850	227	105	7.1	--	--	38	14	8.3	4.1	3.2
03...	1130	195	98	7.2	--	--	37	16	7.9	4.1	3.2
JUN											
01...	1735	74	121	7.4	--	--	48	16	11	5.1	3.0
AUG											
25...	1500	15	185	6.8	21.5	8.2	72	19	17	7.2	5.5
SEP											
14...	0945	44	171	7.1	--	--	57	.00	14	5.4	4.1
14...	1005	124	123	7.1	--	--	45	--	11	4.3	3.4
14...	1035	231	127	7.3	--	--	49	15	12	4.5	3.2
14...	1535	42	141	7.4	--	--	50	13	12	4.9	3.9

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT											
01...	2.9	82	72	11	--	213	--	1900	440	130	17
14...	2.7	87	60	16	--	202	--	510	93	50	26
20...	2.7	85	57	12	--	212	--	790	120	110	26
28...	4.6	--	30	13	--	159	--	460	83	50	4
NOV											
09...	2.3	76	51	12	--	163	--	440	47	80	6
DEC											
30...	2.2	40	40	12	--	138	--	430	28	50	<1
JAN											
03...	2.5	48	25	10	--	104	--	67000	120	2800	6
03...	2.1	52	23	10	--	99	--	90000	140	3500	5
03...	2.4	29	24	7.4	--	88	--	40000	110	1500	3
03...	2.9	38	23	7.2	--	82	--	35000	100	1400	3
19...	1.6	20	20	16	--	91	--	8300	68	640	3
19...	1.8	19	20	15	--	88	--	6500	67	340	2
19...	2.3	23	22	12	--	92	--	13000	72	710	2
19...	1.6	21	21	11	--	89	--	7700	65	440	2
FEB											
03...	1.6	26	23	5.2	--	78	--	47000	36	1800	<1
03...	2.0	24	22	4.7	--	69	--	38000	54	1400	2
03...	2.5	21	23	4.8	--	68	--	9700	57	370	2
JUN											
01...	1.8	32	27	3.3	--	85	--	8300	51	290	1
AUG											
25...	3.1	53	30	6.2	5.6	119	200	21000	160	550	25
SEP											
14...	7.3	62	24	8.3	2.8	101	<100	65000	120	2700	4
14...	2.7	--	16	3.5	2.6	75	<100	65000	140	3200	8
14...	2.4	34	16	3.1	2.9	77	200	100000	170	5400	14
14...	2.5	37	20	4.2	6.5	93	<100	6200	54	300	1

< Actual value is known to be less than the value shown.

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), JUNE TO SEPTEMBER 1981

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	22.5	18.0	19.5	23.5	18.0	21.0	23.0	20.0	21.5
2	---	---	---	22.0	16.5	19.0	23.5	19.5	21.5	24.5	20.5	22.5
3	---	---	---	21.5	17.5	19.5	25.5	20.5	23.0	23.5	21.0	22.5
4	---	---	---	23.5	17.0	20.0	26.5	20.5	23.5	24.0	21.0	22.5
5	---	---	---	26.0	18.5	21.5	27.0	21.5	24.0	24.5	21.0	22.5
6	---	---	---	24.0	20.5	22.0	25.0	21.0	23.0	23.0	20.0	21.5
7	---	---	---	26.0	19.5	22.5	25.0	20.5	22.0	23.5	19.0	21.5
8	---	---	---	26.5	20.5	23.0	22.5	19.0	20.5	21.5	19.0	20.0
9	---	---	---	28.0	21.0	24.0	23.5	17.5	20.5	19.5	15.5	17.5
10	---	---	---	28.0	21.5	24.5	25.0	18.0	21.0	20.5	14.5	17.5
11	---	---	---	29.0	22.5	25.5	25.5	18.5	21.5	22.0	16.0	19.0
12	---	---	---	28.0	22.5	25.0	25.5	19.5	22.0	22.5	17.5	19.5
13	---	---	---	28.0	22.0	25.0	25.0	16.5	20.5	23.0	17.5	20.0
14	---	---	---	25.5	23.0	24.0	24.5	17.0	20.5	22.5	17.5	20.0
15	---	---	---	28.0	21.0	24.0	24.5	18.0	21.0	20.5	18.0	19.0
16	---	---	---	24.0	22.0	22.5	25.0	20.5	22.0	19.0	16.5	17.5
17	---	---	---	27.5	21.0	23.5	24.0	19.5	21.5	19.0	15.0	16.5
18	---	---	---	25.5	20.0	23.0	24.0	18.5	21.0	17.0	13.0	14.5
19	26.0	18.0	21.5	27.5	20.5	23.5	23.0	18.5	20.5	16.5	12.5	14.0
20	23.0	19.0	21.0	26.0	21.5	23.5	24.0	17.0	20.5	19.5	11.0	14.5
21	27.0	18.5	22.5	26.5	21.0	23.0	21.0	17.5	19.0	20.0	12.5	16.0
22	25.0	20.0	22.5	26.0	20.0	22.5	22.5	15.5	19.0	20.0	13.0	16.5
23	27.0	19.5	22.5	27.0	18.5	22.5	22.5	17.5	20.0	18.0	14.5	16.5
24	28.0	17.5	22.5	26.5	20.5	23.0	23.0	18.0	20.5	17.0	10.5	13.5
25	25.0	19.0	21.5	26.0	20.5	23.0	22.5	18.0	20.0	17.5	11.0	14.5
26	24.5	18.5	21.0	27.0	21.0	24.0	22.5	16.5	19.5	19.5	13.5	16.5
27	25.0	16.0	20.0	28.0	22.0	25.0	22.5	18.0	20.5	19.0	14.5	17.0
28	24.5	16.0	20.5	27.5	23.0	24.5	23.0	18.5	21.0	18.5	15.0	16.5
29	26.0	17.5	21.5	26.0	21.5	23.0	22.5	18.5	20.5	17.0	11.5	14.5
30	24.0	18.5	21.0	25.0	18.0	21.0	23.0	19.5	21.0	18.5	13.0	15.5
31	---	---	---	25.0	19.5	22.0	22.5	19.5	21.0	---	---	---
MONTH	28.0	16.0	21.5	29.0	16.5	23.0	27.0	15.5	21.0	24.5	10.5	18.0
YEAR	29.0	10.5	21.0									

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	14.5	8.5	11.5	---	---	---	6.5	3.5	5.0
2	17.0	10.0	13.0	15.5	9.5	12.0	---	---	---	5.5	1.5	3.5
3	14.0	8.5	11.0	16.0	10.0	13.0	---	---	---	8.5	4.0	7.0
4	15.0	8.5	11.5	16.0	11.0	13.5	5.0	4.0	4.5	9.0	5.5	8.0
5	17.0	11.0	13.5	14.5	12.0	13.0	4.0	2.0	3.5	6.0	4.0	5.0
6	17.0	12.5	14.5	13.5	9.0	11.5	3.5	.5	1.5	6.5	4.0	6.0
7	16.5	13.0	14.5	10.5	6.5	8.5	6.0	.5	3.0	7.5	4.0	6.5
8	15.5	9.5	12.5	11.0	4.0	7.5	6.0	2.5	5.0	4.0	2.0	3.0
9	14.0	9.5	12.0	11.0	6.0	8.5	3.0	.5	1.5	2.0	.0	1.0
10	13.0	12.0	12.5	12.5	7.5	9.5	.5	.5	.5	.0	.0	.0
11	15.5	13.0	13.5	10.5	6.0	8.0	2.5	.5	1.0	.0	.0	.0
12	14.5	12.0	13.5	---	---	---	3.5	.5	1.5	.0	.0	.0
13	15.5	10.0	12.5	---	---	---	2.5	.5	1.0	.0	.0	.0
14	15.0	9.0	12.0	---	---	---	2.0	1.0	1.5	.5	.0	.5
15	13.0	10.5	12.0	---	---	---	3.0	1.0	2.0	.5	.0	.5
16	14.5	12.5	13.5	---	---	---	3.5	.5	1.5	.5	.0	.5
17	16.5	10.5	13.5	---	---	---	3.5	.5	2.0	.0	.0	.0
18	15.0	12.0	14.0	---	---	---	2.5	.5	1.0	.0	.0	.0
19	12.0	8.5	10.0	---	---	---	1.0	.5	.5	1.5	.0	.5
20	12.5	6.0	9.0	---	---	---	1.0	.5	.5	6.0	3.0	5.0
21	13.5	7.0	10.0	---	---	---	.5	.5	.5	7.0	6.0	6.5
22	13.0	10.0	11.5	---	---	---	1.5	.5	.5	6.5	6.0	6.0
23	12.5	8.5	11.0	---	---	---	6.0	1.5	5.0	8.0	4.5	6.5
24	12.5	6.5	9.0	---	---	---	5.0	4.0	4.5	4.0	1.5	2.5
25	11.0	7.0	9.0	---	---	---	4.5	2.0	3.5	4.0	1.0	2.5
26	14.5	11.0	13.0	---	---	---	6.0	1.5	3.5	1.5	.0	.5
27	15.5	12.5	13.5	---	---	---	7.0	2.5	4.5	.5	.0	.0
28	13.0	10.0	11.5	---	---	---	7.5	2.5	5.0	2.5	.0	1.0
29	16.5	9.0	12.0	---	---	---	6.0	1.5	4.0	3.5	.0	---
30	16.5	9.0	12.0	---	---	---	2.5	.5	1.0	6.5	1.5	3.5
31	15.5	8.5	11.5	---	---	---	4.5	1.0	2.5	9.0	4.5	7.0
MONTH	17.0	6.0	12.0	16.0	4.0	10.5	7.5	.5	2.5	9.0	.0	3.0

		FEBRUARY			MARCH			APRIL			MAY	
1	6.0	3.0	4.5	---	---	---	17.0	7.0	11.5	16.0	9.0	12.5
2	---	---	---	---	---	---	16.5	6.5	11.5	15.5	11.0	12.5
3	8.0	6.0	7.0	---	---	---	18.0	9.0	13.5	20.0	10.0	14.5
4	7.0	5.0	6.0	---	---	---	15.5	6.5	10.5	21.0	9.5	15.0
5	8.0	5.0	6.5	---	---	---	13.5	6.5	10.0	22.0	10.5	15.5
6	6.5	.5	---	---	---	---	10.0	4.5	7.0	22.0	12.0	16.5
7	4.5	.0	1.5	---	---	---	13.0	3.0	7.0	19.0	13.5	16.0
8	5.5	.0	3.0	---	---	---	8.0	5.0	6.5	17.5	12.5	15.0
9	6.0	3.5	5.0	---	---	---	8.5	5.5	7.0	19.5	10.0	14.5
10	5.5	2.5	3.5	---	---	---	14.0	5.0	8.0	22.0	10.5	16.0
11	---	---	---	---	---	---	12.5	4.5	8.5	23.0	11.5	17.0
12	---	---	---	---	---	---	18.5	6.5	11.5	24.0	12.5	17.5
13	---	---	---	---	---	---	16.5	10.5	12.5	24.0	13.5	18.5
14	---	---	---	---	---	---	19.0	10.5	14.0	24.5	14.0	18.5
15	7.0	5.0	6.0	---	---	---	22.0	9.5	15.0	22.5	14.5	18.5
16	8.0	7.0	7.5	---	---	---	21.0	13.5	17.0	23.0	15.0	18.5
17	---	---	---	15.0	9.0	11.0	17.0	13.0	15.5	24.0	15.0	19.5
18	---	---	---	15.5	7.5	10.5	21.0	9.5	14.5	22.0	15.0	18.5
19	---	---	---	13.0	9.0	10.5	15.5	10.0	12.5	---	---	---
20	---	---	---	12.0	10.0	11.0	17.0	11.0	13.5	---	---	---
21	---	---	---	12.0	9.0	10.5	19.0	11.5	15.0	---	---	---
22	---	---	---	---	---	---	18.0	9.0	12.0	---	---	---
23	---	---	---	---	---	---	19.0	6.5	12.0	---	---	---
24	---	---	---	12.5	6.0	9.0	19.0	7.0	12.5	---	---	---
25	---	---	---	15.5	7.0	11.0	16.0	9.0	12.5	---	---	---
26	---	---	---	9.5	5.5	7.5	20.5	11.5	15.5	---	---	---
27	---	---	---	8.5	3.5	5.0	15.0	11.0	13.5	---	---	---
28	---	---	---	12.0	1.5	6.0	16.0	10.0	12.0	---	---	---
29	---	---	---	14.0	3.0	8.0	16.5	8.5	12.0	---	---	---
30	---	---	---	16.0	7.0	11.0	18.5	8.5	13.0	---	---	---
31	---	---	---	16.0	10.0	12.0	---	---	---	---	---	---
MONTH	8.0	.0	5.0	16.0	1.5	9.5	22.0	3.0	12.0	24.5	9.0	16.5

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1				---	---	---	26.5	19.5	22.0	21.5	19.5	20.5
2				---	---	---	25.5	18.0	21.5	21.5	18.5	20.0
3				---	---	---	25.5	18.5	22.0	23.5	18.5	20.5
4				---	---	---	27.0	19.5	23.0	23.0	15.0	18.5
5				---	---	---	23.0	21.0	22.0	23.5	14.0	18.0
6				---	---	---	28.5	21.0	24.0	23.0	15.0	18.5
7				---	---	---	27.0	21.5	24.0	23.0	15.5	19.0
8				---	---	---	27.5	22.0	24.0	23.0	17.0	19.5
9				---	---	---	24.0	22.0	23.0	22.5	17.0	19.5
10				---	---	---	27.5	20.5	23.5	23.5	16.5	19.5
11				---	---	---	26.0	19.5	22.5	22.0	16.5	19.5
12				---	---	---	24.0	21.0	22.0	23.0	17.5	20.5
13				---	---	---	24.5	17.5	21.0	22.0	19.0	20.5
14				---	---	---	26.0	19.0	22.0	21.0	18.5	19.5
15				---	---	---	25.5	19.5	22.5	22.0	18.0	19.5
16				---	---	---	23.5	20.5	22.0	22.0	18.0	19.5
17				---	---	---	27.0	19.5	23.0	23.0	16.5	19.0
18				---	---	---	26.0	20.0	22.5	20.5	15.5	18.0
19				---	---	---	26.0	18.5	22.0	20.5	17.0	18.5
20				---	---	---	25.0	19.5	22.0	18.0	15.5	17.0
21				---	---	---	24.5	21.0	22.5	17.0	13.5	15.0
22				---	---	---	23.5	17.0	20.5	16.0	13.0	14.0
23				---	---	---	22.5	18.5	20.5	17.5	10.0	13.0
24				---	---	---	24.0	20.0	21.5	15.5	11.0	13.0
25				---	---	---	23.5	19.5	21.5	15.5	12.0	13.5
26				---	---	---	25.5	16.5	20.5	14.0	13.0	13.5
27				---	---	---	22.5	18.0	20.0	16.0	12.5	14.0
28				---	---	---	23.5	19.5	21.0	17.5	11.5	14.5
29				---	---	---	24.5	17.5	20.5	18.5	12.0	15.0
30				---	---	---	22.5	18.0	20.0	18.0	12.5	15.0
31				21.5	20.5	21.0	22.0	19.0	20.5	---	---	---
MONTH				21.5	20.5	21.0	28.5	16.5	22.0	23.5	10.0	17.5
YEAR	28.5	.0	11.5									

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	13.0	15.5	---	---	---	12.0	10.0	11.0	7.0	4.0	5.5
2	19.5	13.5	16.0	---	---	---	13.5	10.5	11.5	7.0	5.0	6.0
3	18.5	14.5	16.5	---	---	---	14.0	11.0	12.0	5.0	2.0	4.0
4	19.0	15.5	17.5	---	---	---	14.5	11.0	12.0	4.5	.0	2.0
5	19.0	16.5	17.5	---	---	---	14.0	11.5	13.0	---	---	---
6	---	---	---	8.5	3.0	5.5	11.0	8.5	10.0	---	---	---
7	---	---	---	10.0	3.0	5.5	9.5	6.0	8.0	---	---	---
8	---	---	---	10.5	3.5	6.5	8.0	4.0	6.0	---	---	---
9	---	---	---	12.0	5.0	8.0	6.5	3.0	5.0	---	---	---
10	---	---	---	12.5	6.0	8.5	6.5	2.0	4.5	---	---	---
11	---	---	---	12.5	7.5	10.0	7.0	2.5	6.0	---	---	---
12	---	---	---	14.5	10.5	12.0	3.5	.0	2.0	---	---	---
13	---	---	---	10.0	4.0	7.5	1.0	.0	.0	---	---	---
14	---	---	---	7.5	3.0	5.0	2.0	.0	1.0	---	---	---
15	---	---	---	8.5	3.5	6.0	7.5	1.5	4.5	---	---	---
16	---	---	---	8.0	1.5	4.5	8.0	7.0	7.5	---	---	---
17	---	---	---	8.0	3.5	6.0	7.0	5.0	6.5	---	---	---
18	---	---	---	10.5	8.0	9.0	6.5	3.5	5.0	---	---	---
19	---	---	---	13.0	8.0	10.0	6.5	5.0	5.5	---	---	---
20	---	---	---	12.5	10.0	11.0	6.0	4.0	5.0	---	---	---
21	---	---	---	14.0	11.0	12.5	5.5	2.5	4.0	---	---	---
22	---	---	---	14.5	11.5	12.5	5.0	1.5	3.5	---	---	---
23	---	---	---	13.5	10.5	12.0	8.5	4.5	6.0	---	---	---
24	---	---	---	12.5	6.0	9.5	10.0	5.0	7.5	---	---	---
25	---	---	---	8.0	4.5	6.0	13.0	9.0	10.5	---	---	---
26	---	---	---	9.5	5.0	7.5	11.5	10.0	10.5	---	---	---
27	---	---	---	9.0	8.0	8.5	12.0	9.0	10.5	---	---	---
28	---	---	---	11.0	8.0	9.5	13.0	10.0	11.5	---	---	---
29	---	---	---	11.5	9.0	10.5	10.0	6.0	8.0	---	---	---
30	---	---	---	11.5	8.0	9.5	6.5	4.0	5.0	---	---	---
31	---	---	---	---	---	---	7.5	3.5	5.0	---	---	---
MONTH	19.5	13.0	16.5	14.5	1.5	8.5	14.5	.0	7.0	7.0	.0	4.5

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA

LOCATION.--Lat 37°09'50", long 82°15'20", Dickenson County, Hydrologic Unit 05070202, on right bank 125 ft (38 m) upstream from bridge on State Highway 80, 150 ft (46 m) upstream from Fryingpan Creek, 1.3 mi (2.1 km) southeast of Birchleaf, and 3.5 mi (5.6 km) southeast of Haysi.

DRAINAGE AREA.--87.4 mi² (226 4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good. Recording rain gage at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft³/s (98.3 m³/s) Sept. 14, 1982, gage height, 8.85 ft (2.697 m), from rating curve extended above 1,200 ft³/s (34 m³/s); minimum, 1.2 ft³/s (0.034 m³/s) Sept. 14, 15, 1981, gage height, 1.12 ft (0.341 m).

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 1,100 ft³/s (31 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 3, 1982	0955	1300	36.8	5.81	1.771	May 20, 1982	1610	1140	32.3	5.49	1.673
Jan. 4, 1982	1020	1280	36.2	5.77	1.759	Sept. 14, 1982	1425	*3470	98.3	8.85	2.697
Feb. 3, 1982	1210	1940	54.9	6.88	2.097						

July to September 1981: Minimum discharge, 1.2 ft³/s (0.034 m³/s) Sept. 14, 15, gage height, 1.12 ft (0.341 m).

Water year 1982: Minimum discharge, 1.8 ft³/s (0.051 m³/s) Oct. 15; minimum gage height, 1.19 ft (0.363 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										18	3.7	3.0
2										33	4.1	2.9
3										23	5.8	2.9
4										19	4.7	3.2
5										16	3.5	2.6
6										19	20	3.1
7										22	30	14
8										18	238	5.8
9										15	43	4.9
10										13	21	3.9
11										11	15	3.0
12										10	12	2.2
13										9.6	9.9	1.9
14										9.2	7.9	1.5
15										11	7.3	91
16										17	11	96
17										25	13	30
18										11	7.8	17
19										8.9	6.7	12
20										11	6.2	11
21										17	5.2	9.2
22										9.1	5.2	7.9
23										6.1	5.2	6.6
24										4.9	4.9	5.5
25										4.4	4.3	4.5
26										4.8	3.9	4.5
27										3.9	3.7	3.8
28										3.6	3.4	3.4
29										12	2.9	2.9
30										8.2	3.0	2.6
31										5.0	3.1	---
TOTAL	---	---	---	---	---	---	---	---	---	398.7	515.4	362.8
MEAN	---	---	---	---	---	---	---	---	---	12.9	16.6	12.1
MAX	---	---	---	---	---	---	---	---	---	33	238	96
MIN	---	---	---	---	---	---	---	---	---	3.6	2.9	1.5
CFSM	---	---	---	---	---	---	---	---	---	.15	.19	.14
IN.	---	---	---	---	---	---	---	---	---	.17	.22	.15

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	7.3	6.6	70	169	284	68	102	415	52	26	53
2	3.8	6.8	7.2	54	165	208	58	90	281	37	14	54
3	5.6	6.3	7.6	623	1050	164	61	88	152	30	10	31
4	3.8	6.0	7.1	752	500	133	56	72	110	28	8.4	19
5	3.2	6.2	8.1	273	252	123	50	62	245	23	8.2	13
6	2.9	7.3	8.6	133	176	106	54	55	166	18	9.1	9.6
7	3.5	6.9	8.3	114	126	404	47	51	109	16	7.6	7.8
8	3.8	5.3	8.5	117	103	419	43	62	77	21	5.7	6.6
9	3.2	4.5	8.0	105	203	346	45	52	105	18	14	6.3
10	3.4	4.5	7.6	80	322	322	44	45	262	16	13	5.7
11	3.3	4.5	6.9	54	233	270	40	40	203	15	8.4	5.2
12	2.7	3.7	6.2	60	172	220	38	36	124	15	6.5	4.8
13	2.3	2.9	5.4	54	151	209	37	33	484	12	5.5	4.4
14	2.1	3.7	7.8	49	120	229	37	29	313	11	4.8	939
15	2.0	4.6	17	44	116	362	34	26	162	10	4.2	220
16	2.7	5.2	22	34	354	423	32	24	104	9.0	9.0	82
17	2.5	5.9	21	23	873	357	31	24	97	8.6	40	45
18	4.5	6.0	30	26	628	234	34	42	71	10	14	30
19	6.8	5.3	24	37	361	226	29	186	54	16	8.5	24
20	5.6	6.2	22	250	246	443	30	455	46	20	6.0	19
21	4.8	6.1	19	594	201	554	32	257	35	12	5.3	16
22	4.5	5.9	84	420	160	329	27	132	33	9.2	4.8	15
23	8.2	5.3	170	260	128	232	25	154	31	9.1	5.1	13
24	22	4.9	92	200	117	175	24	146	24	9.6	7.2	11
25	9.2	6.6	56	146	100	139	26	111	21	8.1	63	11
26	7.8	7.5	40	105	84	126	47	92	27	7.1	40	11
27	13	8.0	31	95	184	100	207	246	119	6.3	17	15
28	21	8.4	25	96	416	83	301	134	182	9.8	12	13
29	13	7.3	19	55	---	76	191	116	101	11	8.5	10
30	9.9	6.5	14	47	---	73	131	84	72	23	6.9	9.1
31	8.6	---	21	56	---	72	---	57	---	31	39	---
TOTAL	192.0	175.6	810.9	5026	7710	7441	1879	3103	4225	521.8	431.7	1703.5
MEAN	6.19	5.85	26.2	162	275	240	62.6	100	141	16.8	13.9	56.8
MAX	22	8.4	170	752	1050	554	301	455	484	52	63	939
MIN	2.0	2.9	5.4	23	84	72	24	24	21	6.3	4.2	4.4
CFSM	.07	.07	.30	1.85	3.15	2.75	.72	1.14	1.61	.19	.16	.65
IN.	.08	.07	.35	2.14	3.28	3.17	.80	1.32	1.80	.22	.18	.73

WTR YR 1982 TOTAL 33219.5 MEAN 91.0 MAX 1050 MIN 2.0 CFSM 1.04 IN 14.14

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, July 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1982 to January 1983.
WATER TEMPERATURES: April 1982 to January 1983.

INSTRUMENTATION.--Automatic pumping sampler since Aug. 13, 1981. Water-quality monitor since Apr. 14, 1982.

REMARKS.--Unpublished records of daily dissolved oxygen are available for some periods.

EXTREMES FOR APRIL 1982 TO JANUARY 1983.--
SPECIFIC CONDUCTANCE: April to September 1982: Maximum recorded during period, 603 micromhos July 30; minimum recorded, 72 micromhos May 20.

October 1982 to January 1983: Maximum recorded during period, 441 micromhos Oct. 4; minimum recorded, 82 micromhos Dec. 16.

WATER TEMPERATURES: April to September 1982: Maximum recorded during period, 30.5°C July 17, 25; minimum recorded, 9.5°C Apr. 23, 29.

October 1982 to January 1983: Maximum recorded during period, 22.5°C Oct. 6; minimum recorded, 0.0°C Dec. 13-15.

WATER QUALITY DATA, JULY TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
JUL												
06...	1445	18	390	8.2	24.0	7.6	--	--	--	--	--	--
AUG												
24...	1400	4.7	435	8.7	26.0	8.4	140	40	31	15	35	2.8
26...	1645	3.8	490	8.2	25.0	8.4	160	46	36	16	44	3.0
SEP												
24...	1100	5.2	446	8.2	--	--	150	45	34	15	35	3.4

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)
JUL												
06...	90	72	--	--	--	226	--	--	--	--	--	--
AUG												
24...	99	100	9.5	.1	2.8	279	.04	<.010	--	2	<1	100
26...	110	110	10	--	--	324	--	--	200	--	--	--
SEP												
24...	102	98	9.5	--	--	268	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1981

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)
JUL												
06...	--	--	--	--	--	--	--	2100	10	--	--	--
AUG												
24...	3	<1	10	4	<10	3	28	300	10	5900	11	<10
26...	--	--	--	--	--	--	--	710	30	--	--	--
SEP												
24...	--	--	--	--	--	--	--	720	15	--	--	--

< Actual value is known to be less than the value shown.

DATE	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	CYANIDE TOTAL (MG/L AS CN)	SEDI-MENT, SUS-PENDED (MG/L)
JUL												
06...	50	<10	--	--	--	--	--	--	--	--	--	39
AUG												
24...	30	<10	230	<.1	<.01	<1	<1	1	10	20	<.01	11
26...	30	<10	--	--	--	--	--	--	--	--	--	--
SEP												
24...	50	<10	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT											
01...	1010	2.9	530	8.0	--	--	160	34	36	16	48
14...	1100	2.1	592	8.2	--	--	137	.00	30	15	71
20...	0950	5.6	545	8.2	--	--	170	31	38	18	59
29...	1110	12	479	8.3	--	--	150	40	34	16	39
NOV											
12...	1115	3.8	556	8.3	5.5	--	140	.00	31	14	73
DEC											
22...	1940	130	221	7.8	--	--	70	30	16	7.4	15
23...	0510	210	195	7.8	--	--	65	30	15	6.7	11
23...	0610	200	200	7.8	--	--	61	23	14	6.3	12
23...	1140	165	200	7.7	--	--	58	21	13	6.2	13
JAN											
03...	0355	99	182	7.5	--	--	65	28	15	6.8	11
03...	0455	165	177	7.6	--	--	56	19	13	5.6	7.6
03...	0535	246	178	7.8	--	--	64	24	15	6.5	8.7
03...	0600	343	172	7.6	--	--	61	21	13	7.0	9.8
03...	0625	460	160	7.6	--	--	52	19	12	5.4	5.4
03...	0700	595	152	7.5	--	--	53	22	12	5.7	7.3
03...	0705	667	152	7.4	--	--	57	23	12	6.6	9.0
06...	1125	130	164	7.5	--	--	56	31	12	6.3	5.7
21...	0600	393	121	7.3	--	--	40	21	8.9	4.3	4.0
21...	0945	588	104	7.4	--	--	37	15	8.4	4.0	3.6
21...	1410	734	114	7.2	--	--	42	25	9.2	4.5	3.9
22...	0140	588	107	7.2	--	--	38	22	8.4	4.1	3.8
22...	0400	520	116	7.3	--	--	37	18	8.1	4.0	3.9
FEB											
03...	0515	568	125	7.1	--	--	51	31	11	5.7	5.3
03...	0605	709	120	7.2	--	--	45	21	10	4.9	4.1
03...	0700	885	123	7.3	--	--	44	20	9.8	4.8	4.0
03...	0755	1080	120	7.3	--	--	45	21	9.8	4.9	3.8
03...	0900	1380	123	7.2	--	--	47	21	10	5.3	3.9
JUN											
01...	1655	363	130	7.3	--	--	46	18	10	5.0	3.7
AUG											
26...	0925	42	275	8.0	19.0	7.9	87	17	20	9.1	22
SEP											
14...	0845	57	277	7.6	--	--	88	18	20	9.3	21
14...	0937	109	342	7.7	--	--	100	18	23	11	31
14...	1004	178	342	7.8	--	--	99	12	23	10	27
14...	1008	262	284	7.6	--	--	92	12	22	8.9	24
14...	1014	361	263	7.6	--	--	79	9.0	19	7.6	22
14...	1022	482	281	7.7	--	--	78	3.0	18	8.1	26
14...	1508	2890	130	7.3	--	--	44	16	10	4.5	5.0
14...	1532	2570	118	7.2	--	--	44	.00	10	4.5	3.5
14...	1558	2280	118	7.3	--	--	42	16	9.8	4.3	3.3
14...	1612	2000	118	7.3	--	--	42	15	9.9	4.3	4.2
14...	1650	1740	119	7.3	--	--	48	7.0	12	4.4	3.1
14...	1710	1500	119	7.3	--	--	47	10	11	4.8	3.9

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT											
01...	3.1	122	120	12	--	306	--	2400	12	40	<1
14...	3.5	146	130	17	--	369	--	970	20	50	10
20...	3.5	138	130	12	--	345	--	340	14	30	4
29...	3.3	110	95	11	--	277	--	470	33	20	9
NOV											
12...	2.7	140	140	16	--	314	--	840	23	50	5
DEC											
22...	3.5	40	43	11	--	132	--	2200	30	120	2
23...	1.8	35	39	8.6	--	113	--	1500	33	130	<1
23...	1.9	38	37	7.9	--	114	--	3100	30	180	<1
23...	1.7	37	37	7.2	--	124	--	3800	25	180	<1
JAN											
03...	1.6	37	35	16	--	107	--	10000	70	300	2
03...	1.7	37	27	4.4	--	86	--	9500	41	300	<1
03...	4.1	40	31	7.1	--	105	--	1500	140	420	5
03...	1.8	40	31	4.4	--	99	--	24000	180	780	6
03...	1.8	33	26	4.2	--	87	--	21000	61	750	3
03...	1.6	31	30	3.9	--	98	--	2000	66	880	5
03...	1.7	34	37	6.1	--	91	--	25000	61	1100	3
06...	3.2	25	40	5.4	--	101	--	9100	19	630	<1
21...	1.4	19	25	2.8	--	70	--	2000	52	110	1
21...	1.8	22	23	3.0	--	68	--	3700	62	200	2
21...	1.7	17	24	3.1	--	70	--	4900	63	250	2
22...	1.5	16	24	2.6	--	69	--	2500	57	130	3
22...	3.4	19	25	4.8	--	72	--	1600	59	100	2
FEB											
03...	1.4	20	32	3.6	--	87	--	10000	31	280	1
03...	1.4	24	30	3.0	--	82	--	17000	53	330	2
03...	1.5	24	28	3.3	--	77	--	22000	52	470	2
03...	1.5	24	27	3.0	--	78	--	27000	87	620	3
03...	1.5	26	28	3.2	--	86	--	26000	160	1400	6
JUN											
01...	1.5	28	32	2.2	--	85	--	5900	43	240	2
AUG											
26...	2.5	70	57	4.5	6.0	173	200	6700	74	170	9
SEP											
14...	2.4	70	52	4.3	2.7	160	<100	14000	14	670	<1
14...	2.6	85	75	5.6	2.7	214	<100	12000	17	580	<1
14...	2.7	87	66	5.7	2.6	196	<100	15000	53	760	2
14...	2.7	80	53	6.2	2.6	171	<100	47000	8	1400	<1
14...	2.6	70	39	5.0	2.8	157	<100	39000	57	1600	1
14...	2.5	75	59	4.8	3.1	172	300	38000	140	1500	6
14...	2.5	28	21	2.2	5.0	73	<100	53000	150	2200	5
14...	2.4	47	20	2.2	5.3	70	<100	51000	110	2400	7
14...	2.2	26	20	1.7	5.2	70	<100	52000	110	2300	5
14...	2.4	27	20	1.7	5.3	73	<100	44000	130	1900	5
14...	2.0	41	20	1.7	5.4	70	200	44000	110	1900	5
14...	2.3	37	21	1.7	6.0	71	<100	37000	33	1700	3

< Actual value is known to be less than the value shown.

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), APRIL TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1							---	---	---	165	148	156
2							---	---	---	179	165	172
3							---	---	---	211	180	189
4							---	---	---	199	189	193
5							---	---	---	211	199	204
6							---	---	---	222	211	216
7							---	---	---	232	224	229
8							---	---	---	236	228	232
9							---	---	---	239	226	232
10							---	---	---	245	230	237
11							---	---	---	255	243	250
12							---	---	---	271	253	261
13							---	---	---	285	266	273
14							---	---	---	308	279	289
15							315	288	299	309	302	306
16							289	277	282	312	292	301
17							321	285	294	326	299	311
18							345	321	331	352	152	312
19							359	335	345	231	126	172
20							345	323	331	154	72	104
21							347	337	343	115	82	98
22							343	321	329	132	112	122
23							340	324	329	135	111	124
24							350	341	345	146	134	140
25							356	346	352	155	146	149
26							351	320	337	167	126	158
27							326	132	200	134	98	114
28							133	110	115	149	121	135
29							136	114	124	161	150	157
30							148	131	140	174	157	166
31							---	---	---	191	177	184
MONTH							359	110	281	352	72	200

		JUNE			JULY			AUGUST			SEPTEMBER	
1	206	140	154	271	236	251	419	347	371	388	254	314
2	158	145	153	297	271	284	345	336	339	272	240	250
3	181	161	171	331	296	309	376	343	359	254	241	247
4	201	185	194	360	332	339	404	377	391	272	254	261
5	208	165	181	379	361	371	441	403	418	306	270	286
6	186	172	178	389	378	383	483	441	461	324	307	316
7	209	188	198	386	381	384	470	444	460	337	325	330
8	230	211	220	385	370	377	487	469	478	339	332	335
9	244	231	237	437	380	404	533	486	505	352	339	344
10	238	166	198	406	350	363	531	410	502	365	352	357
11	187	169	177	391	367	373	397	302	326	382	366	372
12	210	191	201	425	388	398	388	307	341	403	382	390
13	212	128	175	448	426	435	441	391	425	427	403	413
14	136	125	132	470	449	461	440	434	437	428	92	216
15	159	138	148	477	458	469	448	431	437	186	127	157
16	182	161	172	456	434	441	459	385	439	203	173	190
17	191	180	185	463	435	440	487	313	379	236	205	219
18	205	192	197	455	416	436	428	292	362	256	226	240
19	220	207	215	440	411	428	347	293	326	272	247	256
20	243	222	232	495	446	472	343	331	335	296	263	283
21	263	243	253	457	399	420	333	325	329	307	282	293
22	283	264	270	467	405	446	347	333	338	311	294	301
23	311	281	291	401	376	383	359	334	349	325	303	311
24	316	286	299	421	377	395	374	345	364	337	312	320
25	325	306	315	476	423	448	361	280	321	330	320	327
26	343	327	334	504	478	492	306	255	275	365	331	345
27	346	186	228	487	457	478	268	251	259	406	360	384
28	203	164	174	496	467	475	306	268	287	443	392	422
29	199	171	183	525	446	503	339	308	325	440	418	429
30	236	202	220	603	446	519	369	341	355	420	394	407
31	---	---	---	566	349	439	379	330	352	---	---	---
MONTH	346	125	210	603	236	413	533	251	376	443	92	311
YEAR	603	72	300									

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	406	390	396	299	296	297	122	110	118	179	170	176
2	421	397	407	302	298	300	109	100	103	185	177	180
3	439	409	418	301	283	295	130	110	119	191	185	187
4	441	409	425	285	242	265	140	130	135	203	191	196
5	424	418	421	236	162	190	148	139	144	214	203	208
6	418	414	416	161	155	157	157	146	152	---	---	---
7	414	411	412	166	157	162	173	158	168	---	---	---
8	415	412	413	172	166	169	176	169	173	---	---	---
9	415	314	388	183	172	177	186	174	180	---	---	---
10	412	215	260	195	183	187	195	186	190	---	---	---
11	235	220	228	205	196	200	204	195	200	---	---	---
12	240	236	238	209	205	206	194	183	187	---	---	---
13	239	181	225	216	206	210	197	181	186	---	---	---
14	175	152	156	220	203	212	219	187	205	---	---	---
15	173	157	164	222	215	218	214	185	201	---	---	---
16	190	174	182	223	213	218	181	82	110	---	---	---
17	206	191	199	212	195	206	105	85	94	---	---	---
18	224	207	214	205	201	203	120	106	114	---	---	---
19	233	224	228	213	204	209	136	122	131	---	---	---
20	240	234	238	210	200	204	145	136	142	---	---	---
21	269	239	252	199	190	195	156	145	151	---	---	---
22	275	251	260	188	110	143	167	155	162	---	---	---
23	260	241	248	116	110	112	163	159	162	---	---	---
24	268	248	256	138	116	127	172	162	167	---	---	---
25	284	259	265	148	138	144	171	165	167	---	---	---
26	295	268	281	152	146	148	171	153	163	---	---	---
27	332	289	313	151	147	149	153	143	146	---	---	---
28	332	324	327	149	139	145	154	147	151	---	---	---
29	334	324	329	144	109	127	159	153	155	---	---	---
30	323	305	315	121	107	112	162	157	160	---	---	---
31	305	296	298	---	---	---	170	162	165	---	---	---
MONTH	441	152	296	302	107	190	219	82	155	214	170	189

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

TEMPERATURE, WATER (DEG. C), APRIL TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1							---	---	---	14.5	12.0	13.5
2							---	---	---	14.5	12.5	13.5
3							---	---	---	16.5	12.5	14.5
4							---	---	---	18.0	13.0	15.5
5							---	---	---	19.0	14.0	16.5
6							---	---	---	19.0	15.5	17.5
7							---	---	---	18.5	16.5	17.5
8							---	---	---	17.5	16.0	17.0
9							---	---	---	18.0	14.0	16.0
10							---	---	---	19.5	15.0	17.5
11							---	---	---	20.5	16.0	18.5
12							---	---	---	21.5	17.0	19.0
13							---	---	---	22.0	18.0	20.0
14							---	---	---	22.0	18.5	20.5
15							18.5	13.0	15.5	21.5	18.5	20.0
16							18.5	15.0	16.5	21.5	18.5	20.0
17							17.0	15.0	16.5	23.0	19.0	21.0
18							18.0	12.5	15.0	23.0	17.5	20.5
19							15.0	13.0	14.0	18.5	16.0	17.0
20							15.0	12.5	13.5	16.5	14.0	15.0
21							17.5	13.0	15.0	17.5	14.0	15.5
22							16.5	12.0	13.5	19.0	16.0	17.5
23							16.5	9.5	13.0	19.5	16.0	17.5
24							17.0	10.0	13.5	18.0	16.0	17.0
25							15.0	11.5	13.5	20.0	16.0	18.0
26							16.5	13.0	14.5	19.5	17.0	17.5
27							15.0	12.0	13.5	17.5	14.5	16.5
28							14.0	10.0	12.0	18.5	16.0	17.5
29							13.5	9.5	12.0	20.5	17.0	18.5
30							14.5	11.0	13.0	22.0	18.5	20.5
31							---	---	---	23.5	20.5	22.0
MONTH							18.5	9.5	14.0	23.5	12.0	17.5

		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.5	16.0	17.5	23.5	20.0	21.5	24.5	23.0	23.5	21.0	20.5	20.5
2	18.0	15.5	17.0	24.5	19.5	22.0	26.0	22.5	24.0	21.5	20.0	21.0
3	18.0	16.5	17.5	24.0	21.0	22.5	26.5	22.5	24.5	22.5	20.0	21.0
4	18.0	17.5	18.0	25.0	21.5	23.0	28.0	23.0	25.0	22.0	19.0	20.5
5	17.5	16.0	16.5	26.5	21.5	24.0	24.5	23.5	24.0	23.0	18.0	20.0
6	16.5	15.0	16.0	27.5	22.5	24.5	29.5	23.0	25.5	24.0	18.5	20.5
7	19.5	16.0	17.5	27.0	23.0	25.0	28.5	24.0	26.0	24.0	18.5	20.5
8	20.5	18.0	19.0	25.5	23.0	24.5	29.5	24.0	26.0	24.0	19.0	21.0
9	20.5	18.0	19.5	25.5	22.5	24.0	25.5	24.0	24.5	25.0	19.5	22.0
10	19.5	17.0	18.0	27.5	23.0	24.5	28.0	23.0	25.0	25.0	19.0	21.5
11	19.5	16.0	17.5	26.5	24.0	25.0	27.0	22.5	24.5	24.5	19.0	21.5
12	19.0	17.5	18.5	28.5	24.0	25.5	25.0	21.5	23.0	25.0	19.5	22.0
13	18.5	16.0	17.0	26.0	23.0	24.0	26.0	19.5	22.5	24.0	21.0	22.5
14	18.0	15.0	16.5	28.0	22.0	24.5	27.5	20.5	23.5	22.0	18.0	19.5
15	18.0	16.0	17.0	28.5	23.0	25.5	28.0	21.0	24.0	20.0	18.0	19.0
16	20.5	18.0	19.0	29.5	23.5	26.5	24.5	21.5	23.0	21.0	19.5	20.0
17	20.0	19.0	19.5	30.5	24.0	27.0	23.5	21.0	22.0	22.0	19.0	20.0
18	22.0	18.0	20.0	26.5	24.0	25.5	25.5	21.5	23.0	20.5	19.0	19.5
19	23.0	20.5	21.5	26.5	23.0	24.5	27.5	20.5	23.5	20.0	19.0	19.5
20	23.5	20.5	22.0	25.5	23.5	24.5	27.5	21.0	23.5	19.0	17.5	18.5
21	23.5	20.0	21.5	29.5	23.5	26.0	27.5	21.5	23.5	17.5	15.5	16.5
22	22.5	20.0	21.0	29.5	23.5	26.0	26.5	19.5	22.5	16.5	14.5	15.5
23	23.0	20.0	21.5	28.0	24.0	25.5	24.5	19.5	22.0	17.5	13.5	15.0
24	23.0	19.0	21.0	29.0	23.5	25.5	24.5	20.5	22.5	16.5	14.0	15.0
25	23.0	20.0	21.5	30.5	23.5	26.0	23.0	21.5	22.0	17.0	14.5	15.5
26	24.0	21.0	22.5	30.0	24.0	26.5	23.0	20.0	21.5	16.0	15.0	15.5
27	23.0	19.0	20.5	29.5	24.0	26.5	22.5	20.0	21.0	16.0	15.0	15.5
28	20.5	17.5	19.0	29.0	24.5	26.0	24.5	20.5	22.0	18.5	14.5	16.0
29	20.5	18.5	19.5	26.5	24.5	25.5	25.0	19.5	22.0	20.0	15.0	17.0
30	22.5	20.0	21.0	26.5	24.0	25.0	23.0	20.0	21.5	20.0	15.5	17.0
31	---	---	---	25.0	24.0	24.5	21.5	20.5	21.0	---	---	---
MONTH	24.0	15.0	19.0	30.5	19.5	25.0	29.5	19.5	23.5	25.0	13.5	19.0
YEAR	30.5	9.5	20.0									

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.5	16.0	18.0	13.5	10.0	11.5	12.0	10.0	11.0	5.0	4.0	4.5
2	21.5	16.0	18.5	15.0	10.5	12.5	12.5	11.0	11.5	5.5	5.0	5.0
3	21.5	17.0	19.0	14.0	12.0	13.0	12.5	11.0	12.0	5.5	3.5	5.0
4	22.0	18.0	20.0	13.0	9.5	12.0	12.5	11.0	12.0	3.5	1.5	2.5
5	22.0	18.5	20.0	9.5	7.0	8.0	13.0	12.0	12.5	2.0	.5	1.0
6	22.5	18.5	20.0	6.5	5.0	6.0	12.5	10.0	11.5	---	---	---
7	20.5	18.5	19.5	6.0	4.5	5.0	10.0	7.5	8.5	---	---	---
8	22.0	19.0	20.0	6.5	4.5	5.5	7.5	5.5	6.5	---	---	---
9	19.5	18.5	19.0	7.5	5.0	6.5	5.5	4.0	5.0	---	---	---
10	20.0	18.5	19.0	9.0	6.0	7.5	4.0	3.0	3.5	---	---	---
11	19.5	18.0	19.0	9.5	7.5	8.5	5.5	4.0	5.0	---	---	---
12	18.0	16.5	17.0	11.0	9.0	10.0	3.5	1.5	3.0	---	---	---
13	16.5	14.5	15.5	10.5	6.5	9.0	1.5	.0	.5	---	---	---
14	15.0	14.0	14.5	6.5	5.5	6.0	1.5	.0	.5	---	---	---
15	15.0	13.0	14.0	6.5	4.5	5.5	1.0	.0	.5	---	---	---
16	14.5	12.0	13.5	5.5	3.0	4.0	7.5	1.0	5.5	---	---	---
17	12.5	10.5	11.5	5.5	3.5	4.5	7.0	5.5	6.0	---	---	---
18	12.5	9.5	10.5	7.5	5.5	6.5	5.0	3.5	4.5	---	---	---
19	13.0	10.0	11.0	10.0	7.5	8.5	5.0	4.0	4.5	---	---	---
20	12.0	10.5	11.5	11.0	9.5	10.5	5.5	5.0	5.0	---	---	---
21	12.5	11.5	12.0	12.0	11.0	11.5	5.0	3.5	4.5	---	---	---
22	12.5	10.0	11.0	13.0	12.0	12.5	3.5	2.0	2.5	---	---	---
23	11.0	9.0	10.0	12.5	11.5	12.0	5.5	3.5	4.5	---	---	---
24	9.5	8.0	9.0	12.5	8.5	11.0	7.0	5.0	6.0	---	---	---
25	9.5	8.5	9.0	8.5	6.0	7.0	10.5	7.0	8.5	---	---	---
26	10.0	7.0	8.5	8.0	5.5	6.5	11.0	10.5	11.0	---	---	---
27	10.0	6.5	8.0	8.5	8.0	8.0	11.5	10.5	11.0	---	---	---
28	10.0	6.5	8.0	10.0	8.5	9.0	12.0	10.5	11.5	---	---	---
29	10.5	6.5	8.5	11.0	10.0	10.5	11.5	8.0	10.0	---	---	---
30	12.0	8.0	10.0	10.0	8.5	9.5	7.5	5.0	6.0	---	---	---
31	13.0	9.0	10.5	---	---	---	5.0	4.0	4.5	---	---	---
MONTH	22.5	6.5	14.0	15.0	3.0	8.5	13.0	.0	6.5	5.5	.5	3.5

03208500 RUSSELL FORK AT HAYSI, VA

LOCATION.--Lat 37°12'25", long 82°17'45", Dickenson County, Hydrologic Unit 05070202, on right bank 180 ft (55 m) downstream from bridge on State Highway 63 (revised), at Haysi, and 700 ft (213 m) downstream from McClure River.

DRAINAGE AREA.--286 mi² (741 km²).

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1003: 1926-43. WSP 1385: 1928(M), 1929, 1933(M), 1935(M), 1937-38(M).

GAGE.--Water-stage recorder. Datum of gage is 1,237.61 ft (377.224 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1939, nonrecording gage at highway bridge 180 ft (55 m) upstream at same datum.

REMARKS.--Records good except those for period of doubtful or no gage-height record, Feb. 19 to May 28, which are fair. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 333 ft³/s (9.431 m³/s), 15.81 in/yr (402 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft³/s (1,670 m³/s) Apr. 4, 1977, gage height, 28.24 ft (8.608 m), from rating curve extended above 32,000 ft³/s (910 m³/s) on basis of slope-area measurement of peak flow; minimum observed, 0.2 ft³/s (0.006 m³/s) June 27, 28, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	1130	4800	136	6.94	2.115	Sept. 14	1500	*6220	176	7.88	2.402
Feb. 3	1230	5170	146	7.19	2.192						

Minimum discharge, 12 ft³/s (0.34 m³/s) Oct. 15, gage height, 1.64 ft (0.500 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	36	30	343	550	880	270	310	1060	194	121	644
2	24	32	32	270	540	700	230	300	861	133	71	584
3	29	30	33	2250	3250	560	230	330	509	108	52	202
4	23	29	33	2940	1490	460	210	280	380	102	44	114
5	22	29	38	1020	1000	420	190	230	788	90	45	78
6	20	34	37	580	650	350	210	200	601	76	45	61
7	22	33	32	480	450	1250	180	180	409	66	41	51
8	23	29	28	500	380	1400	160	220	296	70	33	44
9	20	26	27	420	700	1150	180	190	352	80	42	40
10	19	25	26	250	1150	1100	165	160	825	68	51	37
11	19	24	24	180	800	850	150	140	708	66	39	34
12	18	22	22	190	600	750	145	125	453	74	31	33
13	16	23	20	180	520	650	140	115	993	60	28	31
14	14	23	42	155	430	700	140	105	814	51	26	2330
15	13	23	77	140	400	1100	135	95	493	47	25	997
16	14	25	88	110	1200	1400	125	90	346	48	26	441
17	14	27	80	75	2580	1150	120	92	336	45	150	253
18	19	27	119	85	1680	820	130	120	257	47	71	170
19	29	25	90	120	1300	750	110	650	203	65	43	136
20	26	29	65	1100	800	1200	110	1150	180	65	33	110
21	20	31	60	1940	650	1600	120	900	140	52	30	93
22	18	29	150	1330	560	1100	110	600	135	40	28	84
23	30	25	573	1100	480	800	98	1200	129	42	26	74
24	68	28	406	800	400	650	92	680	102	66	41	65
25	47	31	248	600	350	500	100	660	90	44	254	61
26	51	31	174	450	300	450	170	560	94	36	156	60
27	86	32	138	280	450	380	600	1800	364	32	69	68
28	99	35	112	310	1150	330	750	600	546	42	50	62
29	67	33	92	240	---	300	600	458	331	45	41	53
30	49	31	73	210	---	290	380	331	242	76	36	48
31	41	---	89	230	---	280	---	253	---	159	151	---
TOTAL	978	857	3058	18878	24810	24320	6350	13124	13037	2189	1899	7058
MEAN	31.5	28.6	98.6	609	886	785	212	423	435	70.6	61.3	235
MAX	99	36	573	2940	3250	1600	750	1800	1060	194	254	2330
MIN	13	22	20	75	300	280	92	90	90	32	25	31
CFSM	.11	.10	.35	2.13	3.10	2.75	.74	1.48	1.52	.25	.21	.82
IN.	.13	.11	.40	2.46	3.23	3.16	.83	1.71	1.70	.28	.25	.92

CAL YR 1981 TOTAL 69773 MEAN 191 MAX 3350 MIN 11 CFSM .67 IN 9.08
WTR YR 1982 TOTAL 116558 MEAN 319 MAX 3250 MIN 13 CFSM 1.12 IN 15.16

03208680 NORTH FORK POUND RIVER LAKE AT POUND, VA

LOCATION.--Lat 37°07'27", long 82°37'52", Wise County, Hydrologic Unit 05070202, in control tower of North Fork Pound Dam at Pound, 1,200 ft (366 m) upstream from Stacy Branch, and 1.2 mi (1.9 km) upstream from South Fork Pound River.

DRAINAGE AREA.--17.2 mi^2 (44.5 km^2).

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 29, 1966, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by rockfill dam. Spillway with crest at elevation 1,644.0 ft (501.09 m) is in a saddle 350 ft (107 m) southeast of dam. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,556.5 ft (474.42 m). Storage began in September 1964 during construction with peak discharge affected thereafter; initial filling for regular operation started July 13, 1966. Total capacity at elevation 1,644.0 ft (501.09 m), top of spillway, is 11,290 acre-ft (13.9 hm^3) of which 8,110 acre-ft (10.0 hm^3) is flood-control storage for summer operations between elevations 1,611.0 ft (491.03 m) top of summer conservation pool, and 1,644.0 ft (501.09 m); an additional 1,290 acre-ft (1.59 hm^3) is available for flood control during the period December to March between elevations 1,601.0 ft (487.98 m), top of winter conservation pool, and 1,611.0 ft (491.03 m); contents at established minimum pool, 1,601.0 ft (487.98 m), is 1,900 acre-ft (2.34 hm^3); dead storage is 7 acre-ft (8,630 m^3) below elevation 1,556.5 ft (474.42 m). Figures given herein represent total contents. Lake is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Capacity tables furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,920 acre-ft (8.53 hm^3) Apr. 8, 1977, elevation, 1,629.41 ft (496.644 m); minimum (after initial filling for regular operation), 1,660 acre-ft (2.05 hm^3) Jan. 23, 1969, elevation, 1,598.62 ft (487.259 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,430 acre-ft (6.70 hm^3) Sept. 15, elevation, 1,623.11 ft (494.724 m); minimum, 1,980 acre-ft (2.44 hm^3) Dec. 4, elevation, 1,601.77 ft (488.219 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1611.71	3300	
Oct. 31	1606.68	2570	-730
Nov. 30	1601.93	1990	-580
Dec. 31	1602.32	2040	+50
CAL YR 1981			+10
Jan. 31	1602.29	2030	-10
Feb. 28	1603.16	2130	+100
Mar. 31	1602.14	2020	-110
Apr. 30	1606.04	2480	+460
May 31	1610.30	3080	+600
June 30	1611.11	3200	+120
July 31	1611.76	3300	+100
Aug. 31	1611.33	3240	-60
Sept. 30	1611.23	3220	-20
WTR YR 1982			-80

03208700 NORTH FORK POUND RIVER AT POUND, VA.

LOCATION.--Lat 37°07'32", long 82°37'36", Wise County, Hydrologic Unit 05070202, on right bank at Pound, 700 ft (213 m) downstream from Stacy Branch, 1,600 ft (488 m) downstream from North Fork Pound River Dam, and 0.9 mi (1.4 km) upstream from confluence with South Fork.

DRAINAGE AREA.--18.5 mi² (47.9 km²).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.00 ft (457.200 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1965, on left bank at datum 44.88 ft (13.679 m) higher.

REMARKS.--Records fair. Flow regulated since August 1966 by North Fork Pound River Lake (station 03208680). Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--21 years, 29.3 ft³/s (0.830 m³/s), 21.51 in/yr (546 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,480 ft³/s (127 m³/s) Mar. 12, 1963, gage height, 61.58 ft (18.770 m), present datum, from rating curve extended above 650 ft³/s (18 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.02 ft³/s (<0.001 m³/s) Sept. 16, 1964, Aug. 11, 12, Oct. 28, Nov. 10, 1969; minimum daily, 0.04 ft³/s (0.001 m³/s) Sept. 15, 1964, Aug. 11, 1969; minimum gage height, 47.66 ft (14.527 m) Sept. 16, 1964, present datum. Maximum discharge since construction of North Fork Pound River Dam in 1966, 1,230 ft³/s (34.8 m³/s) Sept. 14, 1982, gage height, 55.79 ft (17.005 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 63.9 ft (19.5 m), present datum, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,230 ft³/s (34.8 m³/s) Sept. 14, gage height, 55.79 ft (17.005 m), from rating curve extended as explained above; minimum, 0.30 ft³/s (0.008 m³/s) Oct. 22, gage height, 47.95 ft (14.615 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Dec. 2, 4-9, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	19	3.5	14	34	33	11	5.1	5.8	3.4	4.4	31
2	25	17	2.7	14	61	51	3.4	5.1	45	3.3	4.3	116
3	25	15	2.9	45	99	50	3.5	4.9	64	3.3	5.0	79
4	22	12	2.7	134	120	49	3.5	4.8	38	3.3	4.8	12
5	18	15	2.7	203	34	35	3.6	4.7	30	3.3	4.8	11
6	18	14	2.7	168	27	17	3.8	4.6	30	3.3	4.8	11
7	18	12	2.7	132	27	23	3.7	4.7	17	3.3	4.8	11
8	18	12	2.7	103	29	123	3.7	4.9	7.7	3.3	4.5	11
9	18	13	2.7	52	65	133	3.8	4.6	8.0	3.4	4.8	6.2
10	18	15	2.9	45	93	104	3.6	4.5	9.9	3.4	4.8	4.0
11	18	15	2.7	34	91	78	3.4	4.5	11	3.6	4.5	4.0
12	18	15	2.9	30	42	57	3.4	4.5	11	3.5	4.5	3.9
13	18	12	2.9	16	40	59	3.3	4.4	11	3.4	4.5	4.0
14	18	9.5	3.1	7.3	39	60	12	4.2	12	3.3	4.5	298
15	18	9.5	3.3	7.3	40	84	4.1	4.2	13	3.3	4.5	275
16	16	8.4	3.1	7.1	86	129	4.0	4.2	13	3.3	4.6	295
17	14	12	3.1	6.9	183	101	4.2	4.2	12	3.3	4.7	305
18	14	13	4.8	8.0	149	72	4.1	4.3	12	4.7	4.8	193
19	12	15	5.9	69	69	56	4.1	4.3	11	3.8	4.7	176
20	6.2	14	5.9	169	42	45	4.2	4.4	12	3.5	4.6	142
21	6.2	12	7.3	206	41	70	4.2	4.4	10	3.3	4.7	64
22	6.4	12	57	114	77	73	4.2	4.3	10	3.8	4.6	28
23	11	12	99	93	60	60	4.2	5.5	6.6	5.0	4.4	25
24	13	12	61	65	33	38	4.2	5.0	4.8	3.7	4.9	25
25	13	12	29	33	27	27	4.3	4.6	4.8	3.3	24	25
26	13	9.5	25	32	18	27	5.1	5.1	4.8	3.2	38	25
27	15	8.0	19	32	10	27	7.2	5.7	4.8	3.8	29	17
28	23	8.0	19	31	11	27	6.5	5.3	3.5	4.2	17	13
29	25	6.9	19	15	---	27	5.8	5.2	3.6	3.6	11	14
30	22	5.1	16	15	---	27	5.2	4.8	3.7	6.9	3.9	8.8
31	19	---	14	23	---	27	---	5.1	---	5.7	7.7	---
TOTAL	522.8	364.9	431.2	1923.6	1647	1789	141.3	146.1	430.0	115.5	242.1	2232.9
MEAN	16.9	12.2	13.9	62.1	58.8	57.7	4.71	4.71	14.3	3.73	7.81	74.4
MAX	25	19	99	206	183	133	12	5.7	64	6.9	38	305
MIN	6.2	5.1	2.7	6.9	10	17	3.3	4.2	3.5	3.2	3.9	3.9
(*)	-12	-10	+1	.00	+2	-2	+8	+10	+2	+2	-1	.00
MEAN‡	4.86	2.16	14.9	62.1	60.8	55.7	12.7	14.7	16.3	5.73	6.81	74.4
CFSM‡	.26	.12	.81	3.36	3.29	3.01	.69	.79	.88	.31	.37	4.02
IN‡	.30	.13	.93	3.87	3.42	3.47	.77	.92	.99	.36	.42	4.49

CAL YR 1981 TOTAL 6921.1 MEAN 19.0 MAX 223 MIN 2.7 MEAN‡ 19.0 CFSM‡ 1.03 IN‡ 13.92
WTR YR 1982 TOTAL 9986.4 MEAN 27.4 MAX 305 MIN 2.7 MEAN‡ 27.4 CFSM‡ 1.48 IN‡ 20.08

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

03208900 POUND RIVER NEAR GEORGES FORK, VA

LOCATION.--Lat 37°09'51", long 82°31'30", Dickenson County, Hydrologic Unit 05070202, on right bank 50 ft (15 m) upstream from bridge on State Highway 624, 150 ft (46 m) upstream from Camp Creek, and 2.6 mi (4.2 km) northwest of the community of Georges Fork.

DRAINAGE AREA.--82.5 mi² (213.7 km²).

PERIOD OF RECORD.--October 1963 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 1,470.39 ft (448.175 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since August 1966 by North Fork Pound River Lake (station 03208680) 13 mi (21 km) upstream. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 126 ft³/s (3.568 m³/s), 20.74 in/yr (527 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) May 18, 1975, gage height, 14.91 ft (4.545 m), from rating curve extended above 3,600 ft³/s (100 m³/s); minimum, 1.6 ft³/s (0.045 m³/s) Sept. 17, 18, 1964, gage height, 1.80 ft (0.549 m); minimum daily, 1.7 ft³/s (0.048 m³/s) Sept. 17, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Jan. 29, 1957, and Mar. 12, 1963, reached stages of 16.2 ft (4.94 m) and 14.4 ft (4.39 m), respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,480 ft³/s (212 m³/s) Sept. 14, gage height, 12.57 ft (3.831 m), from rating curve extended above 3,600 ft³/s (100 m³/s); minimum, 8.5 ft³/s (0.24 m³/s) Dec. 13, gage height, 2.29 ft (0.698 m); minimum daily, 11 ft³/s (0.31 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	36	20	74	153	190	89	64	98	40	100	451
2	39	34	19	66	136	197	67	60	112	29	60	412
3	36	29	16	698	504	170	70	56	131	24	44	253
4	34	27	14	964	425	149	67	52	112	26	35	80
5	28	25	19	465	281	140	62	47	144	32	31	56
6	30	31	18	303	155	100	67	44	102	22	29	45
7	31	27	16	282	120	326	57	42	83	18	24	38
8	27	24	16	263	109	355	56	52	54	24	27	34
9	26	23	15	167	268	417	63	45	58	31	31	32
10	26	25	14	132	359	344	58	39	86	35	33	23
11	26	25	13	131	279	295	55	36	72	116	23	21
12	26	25	12	121	211	224	55	34	56	51	20	20
13	26	25	11	104	156	230	54	33	62	33	19	19
14	26	20	17	82	131	248	56	31	52	25	17	3060
15	26	18	32	62	125	417	53	29	43	20	16	823
16	26	17	32	55	309	475	49	32	39	18	16	522
17	23	18	30	40	711	422	48	36	43	16	27	488
18	24	23	67	57	613	283	50	31	44	23	21	316
19	38	23	46	122	446	273	45	46	37	139	17	276
20	21	28	28	428	269	370	46	42	38	45	15	229
21	15	25	31	781	214	425	46	36	33	28	15	144
22	15	22	234	646	189	308	42	34	35	21	15	80
23	23	21	319	422	182	239	40	36	35	45	15	55
24	44	25	173	325	133	176	39	133	23	69	43	50
25	29	27	98	213	110	138	39	105	21	33	254	44
26	37	24	81	134	97	138	57	74	21	23	139	42
27	60	26	62	122	117	118	164	115	80	20	85	40
28	66	26	54	108	181	109	115	70	60	167	48	37
29	54	20	49	92	---	103	89	102	54	56	38	34
30	48	19	44	74	---	98	74	68	51	123	25	33
31	39	---	43	86	---	97	---	56	---	129	158	---
TOTAL	992	738	1643	7619	6983	7574	1872	1680	1879	1481	1440	7757
MEAN	32.0	24.6	53.0	246	249	244	62.4	54.2	62.6	47.8	46.5	259
MAX	66	36	319	964	711	475	164	133	144	167	254	3060
MIN	15	17	11	40	97	97	39	29	21	16	15	19
(*)	-12	-10	+1	.00	+2	-2	+8	+10	+2	+2	-1	.00
MEAN‡	20.0	14.6	54.0	246	251	242	70.4	64.2	64.6	49.8	45.5	259
CFSM‡	.24	.18	.65	2.98	3.04	2.93	.85	.78	.78	.60	.55	3.14
IN‡	.28	.20	.75	3.44	3.17	3.39	.95	.90	.87	.70	.64	3.50

CAL YR 1981 TOTAL 27305.0 MEAN 74.8 MAX 1110 MIN 6.0 MEAN‡ 74.8 CFSM‡ .91 IN‡ 12.31
WTR YR 1982 TOTAL 41658.0 MEAN 114 MAX 3060 MIN 11 MEAN‡ 114 CFSM‡ 1.38 IN‡ 18.78

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

03208950 CRANES NEST RIVER NEAR CLINTWOOD, VA

LOCATION.--Lat 37°07'26", long 82°26'20", Dickenson County, Hydrologic Unit 05070202, on left bank on State Highway 649 (revised), 500 ft (152 m) downstream from Clinchfield Railway bridge, 1,000 ft (305 m) downstream from Rush Creek, and 2.1 mi (3.4 km) southeast of Clintwood.

DRAINAGE AREA.--66.5 mi² (172.2 km²).

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WDR VA-77-1: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 1,440.30 ft (439.003 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 82.9 ft³/s (2.348 m³/s), 16.93 in/yr (430 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Apr. 4, 1977, gage height, 26.09 ft (7.952 m), from floodmark, from rating curve extended above 3,100 ft³/s (88 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.48 ft³/s (0.014 m³/s) Sept. 28, 1964, gage height, 0.91 ft (0.277 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 20.0 ft (6.1 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 3	1000	1390	39.4	7.98	2.432
Jan. 4	0930	1630	46.2	8.69	2.649
Jan. 19	2230	1100	31.2	7.04	2.146
Sept. 1	1500	1650	46.7	8.75	2.667
Sept. 14	1430	*4040	114	14.03	4.276

Minimum discharge, 3.0 ft³/s (0.085 m³/s) Dec. 12, gage height, 1.19 ft (0.363 m), result of freezeup; minimum daily, 6.6 ft³/s (0.19 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	10	116	184	195	65	50	175	62	38	446
2	19	15	14	77	155	179	60	48	104	39	22	201
3	11	15	10	675	652	150	63	44	57	31	17	89
4	10	14	9.2	878	347	124	57	38	62	28	16	52
5	8.9	14	12	308	214	120	53	36	117	26	14	37
6	10	17	13	176	165	103	59	32	67	21	15	27
7	11	12	13	233	123	397	50	30	46	19	14	23
8	12	13	13	215	104	316	48	37	36	22	13	21
9	9.6	12	12	160	272	269	55	30	44	20	13	20
10	13	11	11	95	285	238	48	26	103	34	15	18
11	12	10	8.3	55	202	200	46	24	67	27	12	16
12	8.9	9.2	7.2	58	158	178	44	23	46	21	11	16
13	8.5	9.1	6.6	56	144	179	43	22	90	17	11	14
14	12	9.8	12	50	117	172	42	20	60	14	10	1410
15	8.8	8.0	21	45	111	282	43	20	42	14	9.6	331
16	8.5	7.3	21	35	313	282	40	25	35	14	9.6	165
17	8.6	12	23	25	499	258	40	32	42	14	46	99
18	12	9.5	45	27	372	190	41	21	33	24	20	70
19	22	9.8	27	40	272	200	36	30	28	29	15	55
20	11	11	25	379	203	244	37	50	26	18	13	46
21	14	14	19	538	169	278	36	27	21	14	13	43
22	13	12	162	357	137	226	32	27	25	13	11	45
23	18	12	188	282	113	182	30	32	23	14	9.4	38
24	27	12	111	234	102	148	29	38	19	24	19	33
25	15	11	70	168	87	124	31	40	17	14	79	30
26	29	8.9	52	121	78	115	55	29	25	11	32	28
27	45	11	43	96	123	93	107	32	73	13	19	26
28	40	12	35	91	188	78	80	34	148	45	16	24
29	27	9.9	29	74	---	73	65	50	100	17	13	24
30	22	9.5	23	67	---	69	56	30	69	32	10	23
31	19	---	50	99	---	68	---	64	---	62	60	---
TOTAL	498.8	346.0	1095.3	5830	5889	5730	1491	1041	1800	753	615.6	3470
MEAN	16.1	11.5	35.3	188	210	185	49.7	33.6	60.0	24.3	19.9	116
MAX	45	17	188	878	652	397	107	64	175	62	79	1410
MIN	8.5	7.3	6.6	25	78	68	29	20	17	11	9.4	14
CFSM	.24	.17	.53	2.83	3.16	2.78	.75	.51	.90	.37	.30	1.74
IN.	.28	.19	.61	3.26	3.29	3.21	.83	.58	1.01	.42	.34	1.94

CAL YR 1981 TOTAL 15008.2 MEAN 41.1 MAX 620 MIN 2.4 CFSM .62 IN 8.40
WTR YR 1982 TOTAL 28559.7 MEAN 78.2 MAX 1410 MIN 6.6 CFSM 1.18 IN 15.98

03208990 JOHN W. FLANNAGAN RESERVOIR NEAR HAYSI, VA

LOCATION.--Lat 37°14'00", long 82°20'56", Dickenson County, Hydrologic Unit 05070202, in control tower of John W. Flannagan Dam on Pound River, 1.3 mi (2.1 km) upstream from Blacklog Branch, and 3.7 mi (6.0 km) northwest of Haysi.

DRAINAGE AREA.--221 mi² (572 km²).

PERIOD OF RECORD.--September 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Mar. 31, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by rockfill dam. Spillway with crest at elevation 1,410.0 ft (429.77 m) is in a saddle 0.3 mi (0.5 km) upstream from dam and is equipped with 6 radial gates 36 ft (11.0 m) high by 42 ft (12.8 m) wide. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,230.0 ft (374.90 m). Storage began in September 1961 during construction with peak discharge affected thereafter; initial filling for regular operations started in March 1965. Total capacity at elevation 1,446.0 ft (440.74 m), top of gates, is 145,700 acre-ft (180 hm³) of which 78,600 acre-ft (96.9 hm³) is controlled flood storage for summer operations between elevations 1,396.0 ft (425.50 m), top of summer conservation pool, and 1,446.0 ft (440.74 m); an additional 16,500 acre-ft (20.3 hm³) is available for flood control during the period December to March between elevations 1,380.0 ft (420.62 m), top of winter conservation pool, and 1,396.0 ft (425.50 m); contents at established minimum pool, 1,314.0 ft (400.51 m), is 12,000 acre-ft (14.8 hm³); dead storage is 300 acre-ft (370,000 m³) below elevation 1,230.0 ft (374.90 m). Figures given herein represent total contents. Reservoir is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 116,500 acre-ft (144 hm³) Apr. 7, 1977, elevation, 1,430.80 ft (436.108 m); minimum (after initial filling for regular operation), 11,800 acre-ft (14.5 hm³) Apr. 1, 1965, elevation, 1,313.42 ft (400.330 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,900 acre-ft (91.1 hm³) Sept. 15, elevation, 1,401.76 ft (427.256 m); minimum, 27,600 acre-ft (34.0 hm³) Jan. 23, elevation, 1,349.46 ft (411.315 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1395.95	67000	
Oct. 31	1386.78	57100	-9900
Nov. 30	1350.49	28200	-28900
Dec. 31	1349.64	27700	-500
CAL YR 1981			-22300
Jan. 31	1349.76	27800	+100
Feb. 28	1350.69	28300	+500
Mar. 31	1380.44	51000	+22700
Apr. 30	1387.01	57400	+6400
May 31	1392.46	63100	+5700
June 30	1396.48	67600	+4500
July 31	1396.73	67900	+300
Aug. 31	1396.80	68000	+100
Sept. 30	1396.20	67300	-700
WTR YR 1982			+300

03209000 POUND RIVER BELOW FLANNAGAN DAM, NEAR HAYSI, VA

LOCATION.--Lat 37°14'13", long 82°20'36", Dickenson County, Hydrologic Unit 05070202, on right bank 1,100 ft (335 m) upstream from Blacklog Branch, 1,700 ft (518 m) downstream from John W. Flannagan Dam, 1.4 mi (2.3 km) upstream from mouth, and 3.4 mi (5.5 km) northwest of Haysi.

DRAINAGE AREA.--221 mi^2 (572 km^2).

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1963, published as Pound River near Haysi.

REVISED RECORDS.--WSP 953: 1940-41. WSP 1003: 1942, 1943(P). WSP 1275: 1927-30, 1931(M), 1932-39.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1939, nonrecording gage at site 3.8 mi (6.1 km) upstream at different datum. Dec. 20, 1939, to Sept. 30, 1963, water-stage recorder at site 4.6 mi (7.4 km) upstream at datum 79.91 ft (24.357 m) higher.

REMARKS.--Records fair. Flow regulated since March 1965 by John W. Flannagan Reservoir (station 03208990) 1,700 ft (518 m) upstream and since August 1966 by North Fork Pound River Lake (station 03208680) 33 mi (53 km) upstream. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 277 ft^3/s (7.845 m^3/s), 17.02 in/yr (432 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 30,000 ft^3/s (850 m^3/s) Mar. 23, 1929, gage height, 16.5 ft (5.03 m), from floodmarks, site and datum then in use; minimum, less than 0.1 ft^3/s (0.003 m^3/s) on several days in September 1932. Maximum discharge since construction of John W. Flannagan Dam in 1965, 4,540 ft^3/s (129 m^3/s) Apr. 8, 1977, gage height, 8.20 ft (2.499 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Feb. 16, 1968, gage height, 1.42 ft (0.433 m); minimum daily, 2.3 ft^3/s (0.065 m^3/s) June 26-29, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft^3/s (93.5 m^3/s) Sept. 15, gage height, 7.13 ft (2.173 m); minimum, 16 ft^3/s (0.45 m^3/s) Dec. 3, gage height, 1.87 ft (0.570 m); minimum daily, 31 ft^3/s (0.88 m^3/s) Mar. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	658	200	236	375	532	112	47	51	128	217	496
2	188	653	63	174	355	603	47	48	51	100	155	1020
3	194	653	37	1470	1420	565	47	47	51	63	88	559
4	79	718	49	2420	1270	371	47	46	51	63	71	222
5	117	752	48	1410	713	335	47	46	52	63	71	69
6	133	752	48	761	468	296	47	46	105	63	71	69
7	136	669	39	585	381	955	47	46	186	63	71	69
8	133	627	34	542	285	969	47	47	120	63	73	70
9	133	622	34	481	561	957	48	47	158	63	73	71
10	133	596	34	337	912	889	47	47	349	63	73	71
11	133	566	34	173	813	701	47	47	461	63	73	71
12	133	528	34	143	598	230	47	47	362	63	73	71
13	177	499	34	193	456	31	47	47	191	64	55	59
14	228	499	34	206	343	31	47	47	191	65	48	1200
15	244	495	73	141	304	32	47	47	191	65	49	2710
16	241	490	79	102	625	32	47	47	117	65	50	1930
17	241	490	59	102	1790	32	48	47	87	65	50	834
18	241	454	129	102	1700	32	47	46	87	65	49	748
19	209	433	87	150	1040	33	47	46	87	155	49	437
20	196	384	61	768	627	34	46	47	87	137	51	353
21	156	327	61	1860	571	34	46	47	87	82	51	272
22	126	327	380	1900	450	34	46	48	87	69	51	146
23	177	355	718	1090	404	34	46	49	87	69	51	100
24	197	376	509	808	372	34	46	47	87	69	60	100
25	172	400	264	530	281	34	46	48	87	69	178	99
26	188	424	183	350	234	126	47	49	87	71	260	99
27	221	420	161	234	312	253	47	49	87	71	156	67
28	234	420	89	254	502	254	47	49	272	71	155	47
29	228	416	85	255	---	253	47	49	237	71	90	47
30	404	416	98	197	---	253	47	49	155	71	57	47
31	664	---	124	183	---	254	---	49	---	164	252	---
TOTAL	6124	15419	3882	18157	18162	9223	1471	1468	4308	2416	2871	12153
MEAN	198	514	125	586	649	298	49.0	47.4	144	77.9	92.6	405
MAX	664	752	718	2420	1790	969	112	49	461	164	260	2710
MIN	68	327	34	102	234	31	46	46	51	63	48	47
(*)	-173	-496	-7	+2	+11	+367	+116	+103	+78	+7	+1	-12
MEAN‡	24.5	18.0	118	588	660	665	165	150	222	84.9	93.6	393
CFSM‡	.11	.08	.53	2.66	2.99	3.01	.75	.68	1.00	.38	.42	1.78
IN‡	.13	.09	.62	3.07	3.11	3.47	.83	.78	1.12	.44	.49	1.99

CAL YR 1981 TOTAL 72473 MEAN 199 MAX 1480 MIN 15 MEAN‡ 168 CFSM‡ .76 IN‡ 10.29
WTR YR 1982 TOTAL 95654 MEAN 262 MAX 2710 MIN 31 MEAN‡ 262 CFSM‡ 1.19 IN‡ 16.10

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake and John W. Flannagan Reservoirs; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

03209200 RUSSELL FORK AT BARTLICK, VA

LOCATION.--Lat 37°14'45", long 82°19'25", Dickenson County, Hydrologic Unit 05070202, on left bank at Bartlick, just upstream from bridge on State Highway 611, 0.2 mi (0.3 km) downstream from Pound River, and 1.1 mi (1.8 km) upstream from Fall Branch.

DRAINAGE AREA.--526 mi² (1,362 km²).

PERIOD OF RECORD.--October 1962 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,165.00 ft (355.092 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of doubtful or no gage-height record, July 25 to Sept. 9 and Sept. 13-30, which are fair. Flow regulated since March 1965 by John W. Flannagan Reservoir (station 03208990) 1.9 mi (3.1 km) upstream and since August 1966 by North Fork Pound River Lake (station 03208680) 35 mi (56 km) upstream. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--20 years, 691 ft³/s (19.57 m³/s), 17.84 in/yr (453 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Apr. 4, 1977, gage height, 27.55 ft (8.397 m), from rating curve extended above 11,000 ft³/s (310 m³/s) on basis of computation of peak flow over dam; minimum, 5.3 ft³/s (0.15 m³/s) Sept. 18, 1964, gage height, 5.03 ft (1.533 m); minimum daily, 5.5 ft³/s (0.16 m³/s) Sept. 17, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 30 ft (9.1 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,310 ft³/s (235 m³/s) Sept. 14, gage height, 13.43 ft (4.093 m); minimum, 51 ft³/s (1.44 m³/s) Dec. 13, gage height, 6.84 ft (2.085 m); minimum daily, 55 ft³/s (1.56 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	722	253	597	1040	1620	439	417	1260	308	310	340
2	312	712	100	483	1010	1440	324	409	1040	233	320	1100
3	307	707	73	4160	4970	1240	324	438	610	169	240	1600
4	105	772	83	5890	3590	923	306	359	504	159	140	700
5	137	809	90	2990	1840	837	278	314	1030	149	110	350
6	164	816	90	1450	1250	726	300	282	807	135	115	150
7	163	731	75	1160	936	2450	263	258	650	124	115	130
8	163	680	65	1140	738	2650	243	303	453	127	110	120
9	161	673	64	994	1420	2330	264	266	537	137	100	110
10	161	649	62	667	2260	2190	246	231	1450	125	110	109
11	158	618	61	384	1810	1820	226	214	1330	127	120	105
12	157	571	58	375	1330	1130	219	197	889	131	110	102
13	204	550	55	411	1090	840	217	182	1300	122	100	100
14	260	547	76	420	850	884	217	171	1110	113	90	90
15	280	544	161	322	777	1410	211	159	724	108	74	3600
16	280	544	183	248	1830	1710	199	154	479	108	75	3800
17	278	544	152	193	5040	1420	197	157	417	106	76	2000
18	285	510	269	205	4090	1020	205	158	337	108	200	1100
19	259	484	202	328	2560	954	186	774	280	211	130	900
20	241	440	142	2240	1660	1530	184	1320	258	201	90	600
21	189	384	133	4460	1400	2030	191	1100	222	139	85	450
22	153	384	664	3890	1120	1360	174	750	215	110	80	340
23	224	406	1350	2320	933	998	164	1490	213	108	78	250
24	291	430	979	1780	857	778	161	823	187	138	76	180
25	242	455	558	1220	703	638	165	825	175	120	90	170
26	268	485	394	866	591	679	242	715	170	110	420	160
27	337	485	322	571	883	718	745	2180	389	105	400	160
28	370	485	214	622	1890	652	932	750	802	100	220	140
29	329	485	182	544	---	622	670	592	575	110	200	110
30	478	480	178	456	---	602	510	432	391	120	130	100
31	731	---	218	461	---	597	---	324	---	140	90	---
TOTAL	7778	17102	7506	41847	48468	38798	9002	16744	18804	4301	4604	19166
MEAN	251	570	242	1350	1731	1252	300	540	627	139	149	639
MAX	731	816	1350	5890	5040	2650	932	2180	1450	308	420	3800
MIN	91	384	55	193	591	597	161	154	170	100	74	90
(*)	-173	-496	-7	+2	+11	+367	+116	+103	+78	+7	+1	-12
MEAN‡	77.9	74.1	235	1352	1742	1619	416	643	705	146	150	627
CFSM‡	.15	.14	.45	2.57	3.31	3.08	.79	1.22	1.34	.28	.29	1.19
IN‡	.17	.16	.52	2.96	3.45	3.55	.88	1.41	1.50	.32	.33	1.33

CAL YR 1981 TOTAL 156951 MEAN 430 MAX 4020 MIN 53 MEAN‡ 399 CFSM‡ .76 IN‡ 10.30
WTR YR 1982 TOTAL 234120 MEAN 641 MAX 5890 MIN 55 MEAN‡ 641 CFSM‡ 1.22 IN‡ 16.56

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake and John W. Flannagan Reservoirs; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

03213577 KERSHAW BRANCH NEAR HURLEY, VA

LOCATION.--Lat 37°27'01", long 82°00'40", Buchanan County, Hydrologic Unit 05070201, on right bank 0.5 mi (0.8 km) upstream from Guess Fork and 2.1 mi (3.4 km) north of Hurley.

DRAINAGE AREA.--0.60 mi² (1.55 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,140 ft (347 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97 ft³/s (2.75 m³/s) June 6, 1981, gage height, 2.95 ft (0.899 m); minimum daily, 0.02 ft³/s (0.001 m³/s) Sept. 10-14, 29, 30, Nov. 18, 19, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 26	2340	29	0.82	2.23	0.680	Aug. 31	0610	37	1.05	2.32	0.707
Aug. 8	1700	*39	1.10	2.35	.716						

Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Nov. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.06	.07	.34	.42	1.1	.37	.17	.34	.08	.06	.49
2	.06	.06	.07	.22	.42	.88	.34	.13	.30	.07	.06	.09
3	.04	.06	.07	3.3	.78	.70	.38	.12	.19	.38	.05	.04
4	.03	.06	.08	1.9	.61	.55	.43	.10	.70	.30	.04	.04
5	.04	.06	.09	.93	.47	.44	.34	.09	.61	.18	.06	.06
6	.04	.07	.08	.94	.42	.44	.27	.09	.30	.08	.05	.08
7	.04	.06	.08	1.0	.38	1.9	.21	.08	.27	.07	.05	.07
8	.04	.05	.08	.93	.40	1.8	.20	.12	.36	.12	2.1	.07
9	.04	.05	.07	.83	3.7	1.8	.27	.09	.22	.09	.65	.07
10	.03	.05	.07	.66	1.8	2.1	.24	.07	1.3	.09	.07	.07
11	.03	.04	.07	.50	1.1	1.5	.19	.07	.44	.13	.04	.07
12	.03	.04	.08	.36	.80	1.3	.18	.06	.64	.10	.06	.07
13	.03	.03	.08	.27	.64	1.6	.19	.07	1.6	.06	.06	.07
14	.03	.03	.42	.27	.52	1.9	.20	.08	.47	.06	.05	.08
15	.03	.03	.48	.27	.58	7.8	.16	.07	.22	.06	.05	.10
16	.03	.03	.28	.27	1.3	3.5	.14	.07	.24	.06	.06	.07
17	.03	.03	.45	.22	2.2	1.9	.15	.06	.24	.08	.05	.06
18	.09	.02	.91	.24	1.7	1.2	.13	.09	.18	.10	.04	.05
19	.08	.02	.80	.28	1.6	1.2	.15	.12	.15	.08	.04	.05
20	.06	.05	.64	.52	1.5	2.1	.15	.09	.12	.09	.04	.04
21	.06	.04	.62	.70	1.2	3.5	.15	.09	.11	.08	.04	.04
22	.06	.04	2.1	.47	.74	3.2	.12	.07	.11	.12	.03	.04
23	.13	.04	.78	.44	.58	2.1	.11	.09	.10	.08	.03	.04
24	.10	.09	.36	.38	.49	1.7	.11	.06	.09	.06	.04	.04
25	.08	.08	.22	.34	.38	.93	.12	.06	.09	.04	.09	.04
26	.20	.07	.17	.34	.42	.70	.55	.18	.10	.04	.04	.06
27	.14	.08	.14	.36	.99	.58	1.2	.24	.09	.04	.04	.10
28	.11	.07	.12	.42	1.5	.52	.24	.27	.09	.15	.04	.09
29	.09	.07	.10	.42	---	.44	.14	.24	.10	.08	.03	.07
30	.07	.07	.09	.42	---	.38	.16	.15	.09	.14	.06	.06
31	.07	---	.22	.44	---	.45	---	.12	---	.08	4.0	---
TOTAL	1.97	1.55	9.89	18.98	27.64	50.21	7.59	3.41	9.86	3.19	8.12	2.32
MEAN	.064	.052	.32	.61	.99	1.62	.25	.11	.33	.10	.26	.077
MAX	.20	.09	2.1	3.3	3.7	7.8	1.2	.27	1.6	.38	4.0	.49
MIN	.03	.02	.07	.22	.38	.38	.11	.06	.09	.04	.03	.04
CFSM	.11	.09	.53	1.02	1.65	2.70	.42	.18	.55	.17	.43	.13
IN.	.12	.10	.61	1.17	1.71	3.11	.47	.21	.61	.20	.50	.14

CAL YR 1981 TOTAL 189.89 MEAN .52 MAX 9.4 MIN .02 CFSM .87 IN 11.75
WTR YR 1982 TOTAL 144.73 MEAN .40 MAX 7.8 MIN .02 CFSM .67 IN 8.96

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1980 to September 1982 (discontinued).
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to December 1981 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1982 (discontinued).
INSTRUMENTATION.--Sediment pumping sampler.
REMARKS.--Suspended-sediment discharge record is fair. Suspended-sediment data for the 1981 water year is also published below.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,000 mg/L July 8, 1982; minimum daily mean, 0 mg/L on many days throughout 1981.
SEDIMENT LOADS: Maximum daily, 43 tons (39 metric tons) Mar. 15, 1982; minimum daily, 0 tons (0 metric tons) on many days throughout each year.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.10	2	.00	.07	6	.00	.34	10	.01
2	.10	11	.00	.07	4	.00	.32	---	---
3	.12	8	.00	.07	3	.00	.28	10	.01
4	.10	6	.00	.07	3	.00	.23	6	.01
5	.09	5	.00	.07	2	.00	.23	16	.01
6	.08	3	.00	.06	2	.00	.24	8	.01
7	.08	2	.00	.07	2	.00	.24	2	.00
8	.08	3	.00	.07	3	.00	.21	0	.00
9	.08	2	.00	.07	4	.00	.34	6	.01
10	.08	3	.00	.07	2	.00	.36	5	.00
11	.08	4	.00	.06	2	.00	.32	14	.01
12	.07	4	.00	.06	3	.00	.28	8	.01
13	.07	4	.00	.06	0	.00	.26	2	.00
14	.06	3	.00	.07	0	.00	.22	2	.00
15	.06	3	.00	.07	4	.00	.21	1	.00
16	.06	4	.00	.08	4	.00	.20	1	.00
17	.06	4	.00	.28	---	---	.15	1	.00
18	.06	3	.00	.68	---	---	.13	0	.00
19	.06	2	.00	.24	3	.00	.12	0	.00
20	.07	4	.00	.16	4	.00	.10	0	.00
21	.05	2	.00	.13	4	.00	.09	0	.00
22	.05	2	.00	.11	2	.00	.08	1	.00
23	.04	3	.00	.24	12	.01	.10	1	.00
24	.05	3	.00	2.7	275	3.1	.20	---	---
25	.34	---	---	.70	15	.03	.16	3	.00
26	.11	28	.01	.42	5	.01	.14	6	.00
27	.08	6	.00	.53	6	.01	.14	3	.00
28	.08	3	.00	.51	24	.03	.14	1	.00
29	.08	3	.00	.44	28	.03	.15	12	.00
30	.07	3	.00	.44	11	.01	.20	21	.01
31	.07	3	.00	---	---	---	.18	27	.01
TOTAL	2.58	---	0.01	8.67	---	3.23	6.36	---	0.10

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.21	8	.00	.25	23	.02	.79	19	.04
2	.21	3	.00	1.1	145	.66	.70	16	.03
3	.20	8	.00	.34	.25	.02	.59	14	.02
4	.18	3	.00	.38	14	.01	.86	124	.41
5	.14	1	.00	.54	10	.01	3.7	541	5.8
6	.13	1	.00	.36	19	.02	2.3	138	.86
7	.12	0	.00	.39	31	.03	1.5	34	.14
8	.12	1	.00	.49	14	.02	1.1	24	.07
9	.11	1	.00	.45	13	.02	.75	16	.03
10	.11	0	.00	.41	40	.04	.56	16	.02
11	.11	1	.00	.90	105	.24	.50	20	.03
12	.10	1	.00	.79	17	.04	.42	30	.03
13	.10	1	.00	.65	28	.05	.39	12	.01
14	.13	7	.00	.54	23	.03	.31	26	.02
15	.11	3	.00	.46	24	.03	.27	23	.02
16	.10	2	.00	.50	30	.04	.70	---	---
17	.09	4	.00	1.7	436	1.7	.52	18	.03
18	.10	2	.00	1.7	98	.45	.38	14	.01
19	.09	2	.00	1.2	84	.27	.28	28	.02
20	.10	8	.00	1.7	106	.49	.24	15	.01
21	.33	---	---	1.2	70	.23	.20	11	.01
22	.47	48	.06	.88	44	.10	.22	23	.02
23	.47	38	.05	2.3	170	1.1	.42	---	---
24	.38	19	.02	2.1	40	.23	3.3	309	4.7
25	.30	7	.01	1.2	34	.11	3.2	104	.90
26	.30	5	.00	.84	30	.07	2.1	37	.21
27	.32	13	.01	.60	27	.04	1.4	25	.09
28	.22	10	.01	.63	25	.04	.88	25	.06
29	.18	8	.00	---	---	---	.67	26	.05
30	.17	10	.00	---	---	---	.61	30	.05
31	.17	15	.01	---	---	---	.52	32	.04
TOTAL	5.87	---	0.17	24.60	---	6.11	30.38	---	13.73
		APRIL			MAY			JUNE	
1	.94	127	.47	.24	13	.01	3.8	200	4.6
2	1.0	50	.14	.25	11	.01	2.7	72	.52
3	.88	30	.07	.17	10	.00	1.4	38	.14
4	.67	28	.05	.17	33	.02	1.9	157	3.0
5	4.8	298	4.0	.22	---	---	2.1	39	.22
6	5.8	46	.72	.22	18	.01	9.4	---	---
7	2.0	28	.15	.20	23	.01	.55	---	---
8	1.2	24	.08	.18	30	.01	.88	---	---
9	1.0	46	.14	.17	14	.01	1.5	---	---
10	2.8	495	8.6	.17	7	.00	.83	---	---
11	2.5	68	.46	.22	7	.00	.49	---	---
12	1.2	45	.15	.19	6	.00	.45	259	.18
13	1.2	23	.07	.17	7	.00	.58	31	.05
14	.99	37	.14	.25	---	---	.42	14	.02
15	.67	30	.05	.44	---	---	.36	10	.01
16	.58	21	.03	.20	10	.01	.36	10	.01
17	2.2	243	1.7	.18	9	.00	.36	8	.01
18	2.5	19	.13	.28	---	---	.34	6	.01
19	1.8	9	.04	3.8	---	---	.26	4	.00
20	6.9	---	---	2.2	---	---	.22	3	.00
21	3.2	43	.37	.99	43	.11	.20	2	.00
22	1.9	32	.16	.67	34	.06	.18	4	.00
23	1.6	22	.10	.55	---	---	.17	11	.01
24	1.8	23	.11	.78	---	---	.14	17	.01
25	1.2	21	.07	.70	---	---	.45	---	---
26	.78	16	.03	.52	9	.01	.46	---	---
27	.55	15	.02	.55	10	.01	.20	2	.00
28	.49	14	.02	.93	28	.08	.11	2	.00
29	.34	13	.01	.82	4	.01	.10	19	.00
30	.30	8	.01	1.9	196	2.5	.14	---	---
31	---	---	---	2.7	35	.26	---	---	---
TOTAL	53.79	---	18.09	21.03	---	3.13	31.05	---	8.79

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.15	---	---	.09	4	.00	.04	3	.00
2	.10	8	.00	.09	7	.00	.04	3	.00
3	.26	---	---	.10	---	---	.06	28	.01
4	.14	---	---	.08	29	.01	.06	4	.00
5	.11	65	.02	.08	6	.00	.03	5	.00
6	.63	116	.38	.11	---	---	.03	4	.00
7	.19	6	.00	.11	---	---	.03	7	.00
8	.14	81	.03	.17	---	---	.04	30	.00
9	.11	93	.03	.09	11	.00	.03	6	.00
10	.10	24	.01	.09	11	.00	.02	14	.00
11	.10	2	.00	.16	231	.39	.02	7	.00
12	.09	1	.00	.12	40	.01	.02	2	.00
13	.11	---	---	.09	14	.00	.02	3	.00
14	.20	---	---	.08	19	.00	.02	23	.00
15	.10	28	.01	.08	26	.01	.10	---	---
16	.11	4	.00	.25	96	.09	.10	3	.00
17	.09	5	.00	.09	30	.01	.05	0	.00
18	.08	4	.00	.07	14	.00	.04	1	.00
19	.08	2	.00	.05	16	.00	.04	1	.00
20	.10	---	---	.04	19	.00	.04	1	.00
21	.12	---	---	.04	12	.00	.04	0	.00
22	.14	---	---	.04	15	.00	.04	2	.00
23	.09	5	.00	.03	8	.00	.04	2	.00
24	.08	5	.00	.03	13	.00	.04	2	.00
25	.08	4	.00	.03	5	.00	.03	4	.00
26	.07	4	.00	.03	0	.00	.03	2	.00
27	.07	5	.00	.03	4	.00	.03	1	.00
28	.40	413	3.0	.03	24	.00	.03	1	.00
29	1.7	---	---	.04	13	.00	.02	2	.00
30	.26	5	.00	.04	84	.01	.02	1	.00
31	.19	4	.00	.04	4	.00	---	---	---
TOTAL	6.19	---	3.48	2.42	---	0.53	1.15	---	0.01
YEAR	194.09		57.38						

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.06	---	---	.06	11	.00	.07	12	.00
2	.06	13	.00	.06	11	.00	.07	17	.00
3	.04	12	.00	.06	9	.00	.07	18	.00
4	.03	9	.00	.06	10	.00	.08	35	.01
5	.04	---	---	.06	---	---	.09	34	.01
6	.04	19	.00	.07	9	.00	.08	14	.00
7	.04	5	.00	.06	10	.00	.08	11	.00
8	.04	4	.00	.05	10	.00	.08	15	.00
9	.04	3	.00	.05	9	.00	.07	15	.00
10	.03	---	---	.05	9	.00	.07	16	.00
11	.03	18	.00	.04	10	.00	.07	22	.00
12	.03	6	.00	.04	7	.00	.08	23	.00
13	.03	8	.00	.03	6	.00	.08	22	.00
14	.03	6	.00	.03	10	.00	.42	---	---
15	.03	15	.00	.03	7	.00	.48	---	---
16	.03	11	.00	.03	9	.00	.28	---	---
17	.03	47	.00	.03	10	.00	.45	---	---
18	.09	52	.02	.02	13	.00	.91	---	---
19	.08	5	.00	.02	18	.00	.80	---	---
20	.06	13	.00	.05	21	.00	.64	---	---
21	.06	6	.00	.04	25	.00	.62	---	---
22	.06	12	.00	.04	15	.00	2.1	---	---
23	.13	---	---	.04	6	.00	.78	---	---
24	.10	11	.00	.09	---	---	.36	---	---
25	.08	---	---	.08	16	.00	.22	---	---
26	.20	---	---	.07	18	.00	.17	---	---
27	.14	9	.00	.08	15	.00	.14	---	---
28	.11	12	.00	.07	24	.00	.12	---	---
29	.09	12	.00	.07	21	.00	.10	---	---
30	.07	14	.00	.07	13	.00	.09	---	---
31	.07	9	.00	---	---	---	.22	---	---
TOTAL	1.97	---	0.02	1.55	---	0.00	9.89	---	0.02
		JANUARY			FEBRUARY			MARCH	
1	.34			.42	---	---	1.1	41	.12
2	.22			.42	---	---	.88	30	.07
3	3.3			.78	---	---	.70	25	.05
4	1.9			.61	---	---	.55	26	.04
5	.93			.47	---	---	.44	33	.04
6	.94			.42	---	---	.44	---	---
7	1.0			.38	---	---	1.9	---	---
8	.93			.40	---	---	1.8	---	---
9	.83			3.7	---	---	1.8	88	.43
10	.66			1.8	---	---	2.1	73	.41
11	.50			1.1	26	.08	1.5	35	.14
12	.36			.80	30	.06	1.3	30	.11
13	.27			.64	49	.08	1.6	---	---
14	.27			.52	38	.05	1.9	38	.19
15	.27			.58	---	---	7.8	1540	43
16	.27			1.3	---	---	3.5	160	1.5
17	.22			2.2	185	1.1	1.9	65	.33
18	.24			1.7	37	.17	1.2	39	.13
19	.28			1.6	49	.21	1.2	64	.30
20	.52			1.5	51	.21	2.1	71	.40
21	.70			1.2	42	.14	3.5	66	.62
22	.47			.74	35	.07	3.2	54	.47
23	.44			.58	49	.08	2.1	41	.23
24	.38			.49	45	.06	1.7	32	.15
25	.34			.38	23	.02	.93	---	---
26	.34			.42	21	.02	.70	---	---
27	.36			.99	235	.63	.58	16	.03
28	.42			1.5	51	.21	.52	23	.03
29	.42			---	---	---	.44	22	.03
30	.42			---	---	---	.38	31	.03
31	.44			---	---	---	.45	74	.11
TOTAL	18.98			27.64	---	3.19	50.21	---	48.96

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.37	20	.02	.17	37	.02	.34	---	---
2	.34	20	.02	.13	40	.01	.30	34	.03
3	.38	22	.02	.12	31	.01	.19	36	.02
4	.43	21	.02	.10	27	.01	.70	993	3.8
5	.34	20	.02	.09	80	.02	.61	38	.06
6	.27	---	---	.09	16	.00	.30	30	.02
7	.21	---	---	.08	29	.01	.27	19	.01
8	.20	15	.01	.12	16	.01	.36	69	.23
9	.27	15	.01	.09	27	.01	.22	31	.02
10	.24	21	.01	.07	82	.02	1.3	505	3.3
11	.19	21	.01	.07	107	.02	.44	20	.02
12	.18	20	.01	.06	34	.01	.64	---	---
13	.19	15	.01	.07	20	.00	1.6	---	---
14	.20	12	.01	.08	15	.00	.47	40	.05
15	.16	13	.01	.07	11	.00	.22	22	.01
16	.14	13	.00	.07	18	.00	.24	19	.01
17	.15	13	.01	.06	16	.00	.24	49	.04
18	.13	---	---	.09	---	---	.18	32	.02
19	.15	---	---	.12	---	---	.15	34	.01
20	.15	10	.00	.09	33	.01	.12	---	---
21	.15	10	.00	.09	14	.00	.11	15	.00
22	.12	12	.00	.07	19	.00	.11	---	---
23	.11	12	.00	.09	---	---	.10	148	.04
24	.11	10	.00	.06	13	.00	.09	26	.01
25	.12	10	.00	.06	12	.00	.09	8	.00
26	.55	---	---	.18	55	.10	.10	---	---
27	1.2	---	---	.24	77	.08	.09	---	---
28	.24	56	.04	.27	---	---	.09	15	.00
29	.14	42	.02	.24	53	.03	.10	---	---
30	.16	33	.01	.15	28	.01	.09	20	.00
31	---	---	---	.12	---	---	---	---	---
TOTAL	7.59	---	0.26	3.41	---	0.38	9.86	---	7.70
		JULY			AUGUST			SEPTEMBER	
1	.08	19	.00	.06	99	.02	.49	---	---
2	.07	6	.00	.06	8	.00	.09	---	---
3	.38	666	.34	.05	5	.00	.04	21	.00
4	.30	566	.81	.04	6	.00	.04	36	.00
5	.18	470	.23	.06	9	.00	.06	23	.00
6	.08	530	.11	.05	9	.00	.08	16	.00
7	.07	220	.04	.05	50	.01	.07	15	.00
8	.12	2000	1.1	2.1	1220	12	.07	10	.00
9	.09	1220	.30	.65	---	---	.07	8	.00
10	.09	---	---	.07	44	.01	.07	7	.00
11	.13	---	---	.04	28	.00	.07	12	.00
12	.10	197	.05	.06	14	.00	.07	8	.00
13	.06	71	.01	.06	9	.00	.07	21	.00
14	.06	40	.01	.05	12	.00	.08	---	---
15	.06	53	.01	.05	22	.00	.10	---	---
16	.06	27	.01	.06	17	.00	.07	11	.00
17	.08	---	---	.05	9	.00	.06	10	.00
18	.10	---	---	.04	10	.00	.05	14	.00
19	.08	64	.01	.04	11	.00	.05	24	.00
20	.09	30	.01	.04	10	.00	.04	20	.00
21	.08	34	.01	.04	10	.00	.04	14	.00
22	.12	1550	1.4	.03	16	.00	.04	10	.00
23	.08	145	.03	.03	14	.00	.04	6	.00
24	.06	187	.03	.04	---	---	.04	10	.00
25	.04	66	.01	.09	---	---	.04	17	.00
26	.04	10	.00	.04	21	.00	.06	---	---
27	.04	9	.00	.04	14	.00	.10	---	---
28	.15	---	---	.04	15	.00	.09	6	.00
29	.08	---	---	.03	19	.00	.07	24	.00
30	.14	---	---	.06	---	---	.06	8	.00
31	.08	68	.01	4.0	---	---	---	---	---
TOTAL	3.19	---	4.53	8.12	---	12.04	2.32	---	0.00
YEAR	144.73		77.10						

03471500 SOUTH FORK HOLSTON RIVER AT RIVERSIDE, NEAR CHILHOWIE, VA

LOCATION.--Lat 36°45'37", long 81°37'53", Smyth County, Hydrologic Unit 06010102, on right bank 400 ft (122 m) upstream from highway bridge at Riverside, 900 ft (274 m) upstream from Spring Branch, 3.2 mi (5.1 km) downstream from Redstone Branch, 4.0 mi (6.4 km) southeast of Chilhowie, and at mile 97.2 (156.4 km).

DRAINAGE AREA.--76.1 mi^2 (197.1 km^2).

PERIOD OF RECORD.--October 1920 to December 1931, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1306. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909, at site 4.5 mi (7.2 km) downstream also published as "near Chilhowie"; records not equivalent.

REVISED RECORDS.--WSP 1033: 1943-44(m). WSP 1306: Drainage area, 1921-31(M).

GAGE.--Water-stage recorder. Datum of gage is 2,106.77 ft (642.143 m) National Geodetic Vertical Datum of 1929. Nov. 1, 1920, to Nov. 14, 1931, nonrecording gage at site 400 ft (122 m) downstream at same datum.

REMARKS.--Records good. Prior to August 1951, diurnal fluctuation at low flow caused by mill 500 ft (152 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 112 ft^3/s (3.172 m^3/s), 19.99 in/yr (508 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft^3/s (272 m^3/s) Nov. 6, 1977, gage height, 10.20 ft (3.109 m), from rating curve extended above 3,700 ft^3/s (100 m^3/s) on basis of slope-area measurement of peak flow; minimum recorded, 2 ft^3/s (0.06 m^3/s) Aug. 26, Oct. 15, 1943, Aug. 9, 11, 1944, Oct. 19, 1945, but may have been less in 1925 and 1926 before installation of water-stage recorder; minimum daily, 8 ft^3/s (0.23 m^3/s) July 19, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft^3/s (18 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1200	*2040	57.8	5.56	1.695	Feb. 18	0630	672	19.0	3.42	1.042
Jan. 21	1800	744	21.1	3.57	1.088	Aug. 9	1230	763	21.6	3.61	1.100
Feb. 3	1430	1560	44.2	4.95	1.509						

Minimum daily discharge, 19 ft^3/s (0.54 m^3/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	29	29	104	162	122	116	145	53	53	65	70
2	31	28	32	113	167	134	106	130	51	46	51	64
3	27	28	31	378	1050	198	102	126	45	44	45	59
4	23	27	31	1350	784	232	96	110	45	47	42	53
5	21	28	32	678	449	278	92	102	52	49	40	48
6	22	29	30	358	327	306	103	95	47	43	39	45
7	25	28	29	245	243	465	93	91	44	42	41	42
8	23	27	30	187	193	511	91	88	44	49	38	41
9	22	26	30	158	216	369	97	83	56	52	429	38
10	21	26	28	118	243	281	93	78	121	45	276	37
11	21	26	28	95	225	232	91	74	109	42	142	36
12	21	26	28	110	194	198	91	70	89	52	102	35
13	21	25	28	100	174	178	89	66	310	78	83	34
14	20	25	31	85	149	155	86	64	232	73	72	41
15	19	25	41	75	137	160	82	61	146	58	63	39
16	20	25	47	65	157	161	78	60	110	49	58	35
17	21	26	43	45	300	175	81	58	108	46	55	34
18	22	25	44	50	624	165	98	56	88	44	59	33
19	23	24	40	70	497	168	96	61	77	47	54	33
20	22	26	38	219	413	169	96	56	72	54	49	34
21	21	26	41	560	345	267	92	61	65	46	47	34
22	21	25	48	534	269	367	85	55	66	43	45	33
23	23	25	99	379	214	303	81	54	62	56	43	33
24	29	27	139	320	182	239	77	66	56	48	46	31
25	28	28	115	248	159	197	76	63	53	42	60	31
26	32	28	92	189	139	189	156	60	50	40	58	32
27	46	29	81	140	135	162	281	55	49	38	47	35
28	40	29	73	131	127	146	337	52	48	38	44	32
29	34	29	70	114	---	135	239	51	54	38	41	31
30	31	28	67	102	---	126	177	49	55	39	39	30
31	30	---	73	106	---	121	---	47	---	57	63	---
TOTAL	785	803	1568	7426	8274	6909	3478	2287	2457	1498	2336	1173
MEAN	25.3	26.8	50.6	240	296	223	116	73.8	81.9	48.3	75.4	39.1
MAX	46	29	139	1350	1050	511	337	145	310	78	429	70
MIN	19	24	28	45	127	121	76	47	44	38	38	30
CFSM	.33	.35	.67	3.15	3.89	2.93	1.52	.97	1.08	.64	.99	.51
IN.	.38	.39	.77	3.63	4.04	3.38	1.70	1.12	1.20	.73	1.14	.57

CAL YR 1981 TOTAL 31195 MEAN 85.5 MAX 995 MIN 15 CFSM 1.12 IN 15.25
WTR YR 1982 TOTAL 38994 MEAN 107 MAX 1350 MIN 19 CFSM 1.41 IN 19.06

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA

LOCATION.--Lat 36°39'06", long 81°50'39", Washington County, Hydrologic Unit 06010102, on right bank 500 ft (152 m) upstream from bridge on U.S. Highway 58, 0.7 mi (1.1 km) downstream from Laurel Creek, 3.2 mi (5.1 km) northwest of Damascus, 4.9 mi (7.9 km) upstream from Middle Fork, and at mile 77.2 (124.2 km).

DRAINAGE AREA.--301 mi^2 (780 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306. Published as "at Vestal" prior to October 1978.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1932-33(M).

GAGE.--Water-stage recorder. Datum of gage is 1,792.30 ft (546.293 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 20 to Sept. 30, which are fair. Some diurnal fluctuation caused by powerplant above station. Tennessee Valley Authority gage-height radio transmitter at station, receiver and recorder at Kingsport, TN.

AVERAGE DISCHARGE.--51 years, 479 ft^3/s (13.57 m^3/s), 21.61 in/yr (549 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s (623 m^3/s) Apr. 5, 1977, gage height, 17.11 ft (5.215 m), from rating curve extended above 10,000 ft^3/s (280 m^3/s) on basis of slope-area measurement of peak flow; minimum, 30 ft^3/s (0.85 m^3/s) Oct. 14, 1941, Dec. 24, 1943, gage height, 2.16 ft (0.658 m); minimum daily, 60 ft^3/s (1.70 m^3/s) Sept. 18, 1954, Sept. 26, 27, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1130	5380	152	9.30	2.835	Feb. 3	1300	*5990	170	9.77	2.978

Minimum discharge, 95 ft^3/s (2.69 m^3/s) Oct. 1, 15, gage height, 2.40 ft (0.732 m); minimum daily, 97 ft^3/s (2.75 m^3/s) Oct. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	149	197	822	604	688	514	602	260	259	1270	1500
2	147	142	208	723	663	764	477	522	276	215	674	520
3	122	135	192	1700	4200	880	430	530	223	201	468	350
4	106	129	192	4240	2870	922	384	467	233	210	359	300
5	105	133	197	2440	1670	1000	459	416	456	265	304	270
6	106	167	175	1380	1230	1030	395	381	354	206	282	240
7	115	140	170	1030	948	1630	388	361	280	216	262	230
8	106	129	184	829	783	2240	391	353	243	269	236	220
9	102	125	184	702	955	1580	463	337	256	481	1210	210
10	101	121	172	528	1180	1210	450	311	519	316	1090	200
11	101	118	166	416	1030	1000	440	288	542	266	684	190
12	101	115	169	472	871	873	425	268	414	414	505	180
13	99	113	157	453	787	767	406	253	1220	430	403	180
14	97	111	214	412	673	740	400	240	905	518	347	170
15	97	110	372	350	620	651	373	232	611	342	304	220
16	100	110	423	280	763	734	352	228	466	277	285	200
17	100	117	366	200	1300	904	338	219	626	245	317	185
18	103	116	340	220	2040	1190	417	266	609	271	334	180
19	110	109	276	300	1730	980	384	265	474	573	276	175
20	103	128	242	1030	1430	958	383	264	417	392	250	170
21	98	129	270	2060	1210	994	381	260	342	312	240	180
22	98	114	411	2050	984	1390	355	244	320	256	230	175
23	119	108	836	1490	814	1480	334	266	295	281	220	170
24	170	141	1010	1250	721	1200	317	297	259	299	210	165
25	128	161	760	1000	655	942	307	272	240	238	250	160
26	186	145	579	798	565	834	456	260	226	210	400	160
27	279	154	495	620	614	817	700	266	220	204	290	170
28	251	208	433	576	644	687	1040	264	228	293	240	180
29	202	199	416	488	---	617	909	290	276	227	220	170
30	176	189	391	438	---	570	725	248	262	218	210	160
31	160	---	494	457	---	526	---	236	---	813	200	---
TOTAL	3986	4065	10691	29754	32554	30838	13793	9706	12052	9717	12570	7580
MEAN	129	136	345	960	1163	995	460	313	402	313	405	253
MAX	279	208	1010	4240	4200	2240	1040	602	1220	813	1270	1500
MIN	97	108	157	200	565	526	307	219	220	201	200	160
CFSM	.43	.45	1.15	3.19	3.86	3.31	1.53	1.04	1.34	1.04	1.35	.84
IN.	.49	.50	1.32	3.68	4.02	3.81	1.70	1.20	1.49	1.20	1.55	.94

CAL YR 1981 TOTAL 142038 MEAN 389 MAX 3620 MIN 65 CFSM 1.29 IN 17.55
WTR YR 1982 TOTAL 177306 MEAN 486 MAX 4240 MIN 97 CFSM 1.62 IN 21.91

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1949 to September 1950, October 1967 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
OCT 08...	1030	105	202	7.3	11.0	2	9.8	88	23	7.5	7.4	1.9
NOV 19...	1030	109	192	7.8	6.0	6	10.5	73	18	6.8	8.1	1.6
JAN 07...	1045	1050	96	7.5	8.0	2	9.8	37	9.6	3.1	2.8	1.5
MAR 01...	1300	665	121	7.4	8.0	16	11.2	57	15	4.8	2.1	3.7
APR 09...	1105	472	146	8.1	7.0	2	11.6	57	15	4.7	1.8	9.7
MAY 28...	0930	253	140	7.8	18.0	1	8.3	58	15	4.9	3.4	1.3
JUL 01...	0800	276	152	8.0	18.5	7	8.1	63	16	5.5	2.5	4.7
AUG 20...	0910	250	173	7.8	19.0	17	7.7	71	18	6.3	4.6	1.3

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 08...	81	16	4.1	<.1	6.1	128	115	<.010	.44	.030	17
NOV 19...	68	21	4.8	<.1	4.0	124	105	<.010	.35	.020	26
JAN 07...	32	6.3	3.8	<.1	5.7	59	52	<.010	.83	<.010	8
MAR 01...	48	4.1	5.4	<.1	5.3	80	69	.010	.74	<.010	22
APR 09...	54	4.0	9.4	<.1	4.8	96	82	<.010	.59	<.010	23
MAY 28...	59	6.0	2.8	<.1	5.5	76	74	<.010	.38	.020	36
JUL 01...	62	5.0	5.9	<.1	5.1	106	82	<.010	.51	<.010	22
AUG 20...	70	7.0	3.1	<.1	5.4	81	88	<.010	.52	.020	35

< Actual value is known to be less than the value shown.

03475000 MIDDLE FORK HOLSTON RIVER NEAR MEADOWVIEW, VA

LOCATION.--Lat 36°42'47", long 81°49'08", Washington County, Hydrologic Unit 06010102, on left bank 48 ft (15 m) downstream from bridge on State Highway 803, 0.9 mi (1.4 km) upstream from Cedar Creek, 4.1 mi (6.6 km) southeast of Meadowview, and at mile 13.2 (21.2 km).

DRAINAGE AREA.--211 mi^2 (546 km^2).

PERIOD OF RECORD.--October 1931 to September 1953, May 1976 to current year. Monthly discharge only for October 1931, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1276: 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,820.22 ft (554.803 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Prior to 1954, flow regulated by powerplant 0.9 mi (1.4 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--28 years, 242 ft^3/s (6.853 m^3/s), 15.58 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft^3/s (354 m^3/s) Nov. 7, 1977, gage height, 13.41 ft (4.087 m); minimum, 6 ft^3/s (0.17 m^3/s) Nov. 10, 1933, Dec. 4, 1936, Jan. 21, 22, Feb. 1, 1940, Jan. 8, 1942, Oct. 15, 16, 31, 1943; minimum daily, 7 ft^3/s (0.20 m^3/s) Nov. 19, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of 11.8 ft (3.60 m), from floodmark, discharge, 10,000 ft^3/s (283 m^3/s), and flood of Dec. 10, 1972, reached a stage of 11.0 ft (3.35 m), from floodmark, discharge, 8,540 ft^3/s (242 m^3/s), from information by Tennessee Valley Authority. Flood of Mar. 30, 1975, reached a stage of 10.37 ft (3.161 m), discharge, 7,410 ft^3/s (210 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1945	3100	87.8	7.03	2.143	Feb. 18	0300	2420	68.5	6.20	1.890
Jan. 21	2000	2160	61.2	5.85	1.783	Mar. 7	2100	2020	57.2	5.66	1.725
Feb. 3	1830	*4100	116	8.01	2.441	June 13	2000	3420	96.9	7.40	2.256

Minimum discharge, 58 ft^3/s (1.64 m^3/s) Oct. 21, 22, gage height, 1.92 ft (0.585 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	94	79	182	302	376	277	212	344	193	280	212
2	78	94	93	217	295	464	255	203	219	160	184	193
3	80	96	88	687	2560	551	245	212	155	141	146	160
4	80	91	84	2120	1870	500	242	190	149	146	130	138
5	80	92	85	1300	912	560	235	181	486	166	122	125
6	79	93	80	613	663	574	262	172	332	141	112	117
7	79	90	76	442	518	1190	317	163	212	125	107	112
8	78	87	76	360	434	1300	277	160	166	125	105	110
9	76	86	74	295	603	789	252	155	181	135	800	105
10	75	86	72	228	884	658	238	143	273	127	901	102
11	74	85	69	163	673	555	228	138	313	117	400	100
12	73	84	69	209	532	473	238	133	225	115	392	97
13	72	84	69	206	469	413	222	127	1960	120	287	93
14	70	81	80	193	400	400	215	122	1380	178	222	135
15	67	70	118	140	372	408	212	120	584	141	190	135
16	66	69	156	110	430	460	193	117	392	117	178	112
17	65	71	132	90	1050	460	187	115	317	115	166	102
18	66	70	119	100	1880	421	209	112	269	115	178	97
19	65	69	105	140	1130	425	209	133	228	112	163	122
20	62	72	82	603	924	434	193	122	206	138	143	110
21	59	73	82	1560	741	1370	190	146	187	143	138	102
22	59	70	132	1280	589	1220	187	138	178	117	127	100
23	63	68	339	789	491	795	172	122	175	138	122	97
24	69	76	561	736	434	628	163	120	157	152	125	93
25	73	85	307	546	388	546	166	135	146	122	181	93
26	78	80	224	430	360	477	245	127	138	107	166	93
27	119	80	195	325	344	404	291	120	152	115	135	100
28	153	84	176	298	336	336	295	115	155	130	122	97
29	113	80	165	262	---	298	266	117	178	110	117	91
30	104	76	151	242	---	284	235	115	199	122	110	88
31	98	---	153	242	---	295	---	107	---	212	169	---
TOTAL	2449	2436	4291	15108	20584	18064	6916	4392	10056	4195	6718	3431
MEAN	79.0	81.2	138	487	735	583	231	142	335	135	217	114
MAX	153	96	561	2120	2560	1370	317	212	1960	212	901	212
MIN	59	68	69	90	295	284	163	107	138	107	105	88
CFSM	.37	.39	.65	2.31	3.48	2.76	1.10	.67	1.59	.64	1.03	.54
IN.	.43	.43	.76	2.66	3.63	3.18	1.22	.77	1.77	.74	1.18	.60

CAL YR 1981 TOTAL 74850 MEAN 205 MAX 2400 MIN 34 CFSM .97 IN 13.20
WTR YR 1982 TOTAL 98640 MEAN 270 MAX 2560 MIN 59 CFSM 1.28 IN 17.39

03478400 BEAVER CREEK AT BRISTOL, VA

LOCATION.--Lat 36°37'54", long 82°08'02", Bristol City, Hydrologic Unit 06010102, on right bank 50 ft (15 m) upstream from bridge on State Highway 1405, 75 ft (23 m) downstream from Goose Creek, 0.9 mi (1.4 km) downstream from Clear Creek, 3.7 mi (6.0 km) northeast of Bristol, VA post office, and at mile 20.6 (33.1 km).

DRAINAGE AREA.--27.7 mi^2 (71.7 km^2).

PERIOD OF RECORD.--July 1957 to current year. Published as "near Bristol" prior to October 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,780.98 ft (542.843 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Dec. 20 to Jan. 20, which are fair. Small diurnal fluctuation at low flow caused by withdrawal of water, which is returned to stream 600 ft (183 m) above station, for car-washing operation. Since September 1965, some regulation at high flow by flood-control reservoirs, capacity, 7,600 acre-ft (9.37 hm^3). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--25 years, 35.8 ft^3/s (1.014 m^3/s), 17.55 in/yr (446 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft^3/s (45.3 m^3/s) Oct. 2, 1977, gage height, 9.94 ft (3.030 m), from rating curve extended above 390 ft^3/s (11 m^3/s) on basis of slope-area measurement of peak flow; minimum, 3.4 ft^3/s (0.096 m^3/s) Dec. 30, 1963; minimum daily, 7.4 ft^3/s (0.21 m^3/s) Sept. 28, 29, Oct. 5, 15, 18, 19, 23, 24, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1936 reached a stage of about 12 ft (3.7 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 376 ft^3/s (10.6 m^3/s) Aug. 9, gage height, 6.12 ft (1.865 m); minimum, 11 ft^3/s (0.31 m^3/s) Dec. 11-14; minimum gage height, 2.73 ft (0.832 m) Dec. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	15	14	35	57	72	59	33	42	41	118	135
2	23	15	14	40	67	69	57	33	31	37	85	67
3	21	15	13	50	183	66	57	33	27	38	72	54
4	21	15	13	200	120	63	54	32	94	38	64	47
5	21	15	13	100	90	66	54	31	95	35	60	44
6	21	15	12	60	81	62	58	31	52	33	56	41
7	21	14	12	45	72	90	53	30	43	34	51	40
8	21	14	12	38	67	81	53	31	39	68	56	39
9	20	14	12	34	108	73	51	30	37	68	244	37
10	19	14	12	32	97	70	48	29	71	44	135	36
11	19	14	11	30	84	66	46	28	47	53	83	36
12	18	14	11	37	77	63	45	28	62	56	71	34
13	18	14	11	36	76	63	44	28	169	42	63	34
14	17	14	17	35	69	60	43	27	97	38	57	148
15	17	14	22	30	67	63	42	28	72	36	53	79
16	17	14	21	22	77	64	41	28	62	35	51	57
17	17	16	21	19	92	77	41	27	61	45	51	48
18	17	14	21	20	97	66	40	28	53	42	52	45
19	16	14	20	30	90	67	39	29	48	36	46	43
20	15	17	17	150	83	94	38	27	47	34	44	43
21	15	14	16	100	78	121	38	27	45	34	46	40
22	15	13	24	77	72	105	37	27	44	33	43	39
23	21	13	50	75	68	90	36	25	42	32	43	38
24	17	15	110	71	66	83	34	26	41	31	44	37
25	16	13	70	64	62	79	37	25	41	31	59	37
26	23	13	50	61	59	76	48	26	41	30	45	36
27	23	13	40	57	68	71	40	26	40	49	41	35
28	18	13	36	53	72	66	36	29	44	81	39	34
29	16	13	34	51	---	63	35	28	48	72	37	33
30	16	13	32	50	---	62	34	25	45	102	36	32
31	15	---	30	57	---	61	---	34	---	226	56	---
TOTAL	576	424	791	1759	2299	2272	1338	889	1680	1574	2001	1468
MEAN	18.6	14.1	25.5	56.7	82.1	73.3	44.6	28.7	56.0	50.8	64.5	48.9
MAX	23	17	110	200	183	121	59	34	169	226	244	148
MIN	15	13	11	19	57	60	34	25	27	30	36	32
CFSM	.67	.51	.92	2.05	2.96	2.65	1.61	1.04	2.02	1.83	2.33	1.77
IN.	.77	.57	1.06	2.36	3.09	3.05	1.80	1.19	2.26	2.11	2.69	1.97

CAL YR 1981 TOTAL 9740.1 MEAN 26.7 MAX 159 MIN 8.0 CFSM .96 IN 13.08
WTR YR 1982 TOTAL 17071.0 MEAN 46.8 MAX 244 MIN 11 CFSM 1.69 IN 22.92

03488000 NORTH FORK HOLSTON RIVER NEAR SALTVILLE, VA

LOCATION.--Lat 36°53'48", long 81°44'47", Smyth County, Hydrologic Unit 06010101, on right bank 0.5 mi (0.8 km) upstream from Cedar Branch bridge, 1.5 mi (2.4 km) northeast of Saltville, 7.8 mi (12.6 km) downstream from Laurel Creek, and at mile 85.0 (136.8 km).

DRAINAGE AREA.--222 mi^2 (575 km^2).

PERIOD OF RECORD.--June 1907 to December 1908 (published as "at Saltville"), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1113: 1944-47. WSP 1306: 1907(M), 1921-22(M), 1924-30(M), 1932-34(M), drainage area at site used 1907-8. WSP 1726: 1947, monthly and yearly runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,703.53 ft (519.236 m) National Geodetic Vertical Datum of 1929. June 11, 1907, to Nov. 12, 1908, nonrecording gage on highway bridge 2.1 mi (3.4 km) downstream at different datum. Nov. 2, 1920, to May 23, 1934, nonrecording gage on highway bridge 0.5 mi (0.8 km) downstream at datum 7.74 ft (2.359 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--63 years, 302 ft^3/s (8.553 m^3/s), 18.47 in/yr (469 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft^3/s (467 m^3/s) Jan. 29, 1957, gage height, 13.20 ft (4.023 m); maximum gage height, 13.57 ft (4.136 m) Nov. 6, 1977; minimum discharge, 1.0 ft^3/s (0.028 m^3/s) Oct. 15, 16, 1947, gage height, 0.13 ft (0.040 m), flow retarded by mine cave-in; minimum daily, 2.0 ft^3/s (0.057 m^3/s) Oct. 15, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s (85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 4	1730	5140	146	7.35	2.240
Feb. 3	1630	*6470	183	8.34	2.542
Feb. 18	0030	3830	108	6.22	1.896
June 13	1730	4040	114	6.41	1.954

Minimum discharge, 38 ft^3/s (1.08 m^3/s) Oct. 15, gage height, 0.51 ft (0.155 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	71	92	237	542	330	237	259	301	228	592	146
2	52	66	116	280	502	542	215	240	214	159	368	210
3	55	62	128	959	4000	840	210	227	155	124	245	152
4	54	58	113	3490	2570	780	202	199	151	120	184	116
5	48	56	107	1880	1100	820	186	180	1210	124	153	93
6	46	56	96	849	739	835	207	165	681	110	138	81
7	44	54	86	601	543	1710	199	155	397	94	117	74
8	42	54	81	500	432	1660	185	152	271	289	100	70
9	42	51	82	416	681	948	206	146	234	215	296	66
10	42	49	81	293	927	691	207	132	447	160	622	63
11	42	48	71	225	677	561	202	120	447	125	354	60
12	41	47	77	250	527	486	199	112	350	120	395	58
13	41	45	63	240	454	435	194	106	2630	117	249	56
14	40	45	88	230	370	411	192	99	1790	297	186	66
15	39	44	165	200	336	500	179	94	778	232	150	78
16	40	44	224	150	453	743	166	90	503	152	128	74
17	40	47	196	110	1780	659	160	87	367	119	135	62
18	43	49	176	120	2820	539	165	84	289	138	150	59
19	40	51	131	170	1430	495	153	98	229	134	160	58
20	40	54	123	898	1070	638	147	102	193	784	116	56
21	40	55	160	1850	827	1370	146	114	163	397	99	57
22	41	56	210	1480	629	1180	136	112	153	230	91	55
23	48	52	723	1010	489	814	127	94	166	268	83	55
24	54	58	1090	957	421	615	121	111	130	323	82	54
25	55	70	596	681	369	495	121	99	112	250	103	53
26	67	73	407	507	318	435	383	90	134	177	138	52
27	134	79	321	353	318	363	507	83	368	137	97	61
28	205	100	265	333	308	311	414	103	209	124	83	60
29	129	103	230	279	---	281	345	109	183	152	76	56
30	96	95	198	245	---	260	297	95	187	254	71	51
31	79	---	185	252	---	249	---	89	---	610	95	---
TOTAL	1820	1792	6681	20045	25632	20996	6408	3946	13442	6763	5856	2252
MEAN	58.7	59.7	216	647	915	677	214	127	448	218	189	75.1
MAX	205	103	1090	3490	4000	1710	507	259	2630	784	622	210
MIN	39	44	63	110	308	249	121	83	112	94	71	51
CFSM	.26	.27	.97	2.91	4.12	3.05	.96	.57	2.02	.98	.85	.34
IN.	.30	.30	1.12	3.36	4.30	3.52	1.07	.66	2.25	1.13	.98	.38

CAL YR 1981 TOTAL 78419 MEAN 215 MAX 4860 MIN 19 CFSM .97 IN 13.14
WTR YR 1982 TOTAL 115633 MEAN 317 MAX 4000 MIN 39 CFSM 1.43 IN 19.38

03521500 CLINCH RIVER AT RICHLANDS, VA

LOCATION.--Lat 37°05'10", long 81°46'52", Tazewell County, Hydrologic Unit 06010205, on right bank 1.0 mi (1.6 km) southeast of Richlands, 1.6 mi (2.6 km) downstream from Middle Creek, 2.2 mi (3.5 km) upstream from Big Creek, and at mile 321.0 (516.5 km).

DRAINAGE AREA.--137 mi² (355 km²).

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1306: 1946(M), 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,924.08 ft (586.460 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1950, nonrecording gage at bridge 1.1 mi (1.8 km) downstream at datum 6.53 ft (1.990 m) lower.

REMARKS.--Records good except those for period of no gage-height record, Jan. 30 to Feb. 19, which are fair. Prior to October 1970, diurnal fluctuation at low flow caused by mill 1.7 mi (2.7 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--37 years, 194 ft³/s (5.494 m³/s), 19.23 in/yr (488 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s (273 m³/s) Jan. 29, 1957, gage height, 19.3 ft (5.88 m), from floodmark, from rating curve extended above 4,900 ft³/s (140 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 3.2 ft³/s (0.091 m³/s) Sept. 8, 1955; minimum daily, 8.8 ft³/s (0.25 m³/s) July 6, Sept. 10, 16, 1964; minimum gage height, 0.45 ft (0.137 m) July 2, 3, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1901, reached a stage of 21.3 ft (6.49 m), present site and datum, from floodmark, discharge, 11,500 ft³/s (326 m³/s), from report by Tennessee Valley Authority. Flood of Feb. 18, 1944, reached a stage of 13.7 ft (4.18 m), present site and datum, from floodmark, discharge, 5,500 ft³/s (156 m³/s), from report by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	Unknown	1880	53.2	6.47	1.972
Feb. 3	Unknown	*3150	89.2	9.05	2.758
June 13	1700	1630	46.2	5.96	1.817

Minimum discharge, 23 ft³/s (0.65 m³/s) Oct. 15, 16, Nov. 16, and, as result of freezeup, Dec. 13, gage height, 0.81 ft (0.247 m); minimum daily, 23 ft³/s (0.65 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	41	36	300	330	270	163	141	127	118	77	111
2	33	34	37	270	300	316	148	132	134	88	64	99
3	41	33	36	700	2300	302	144	129	88	77	55	68
4	32	31	36	1400	1400	266	135	112	91	78	52	53
5	29	31	40	900	700	261	125	101	349	86	52	46
6	30	33	39	445	450	244	138	94	227	70	60	39
7	31	33	36	409	350	552	122	90	149	102	75	35
8	31	30	36	373	270	638	113	91	163	133	66	33
9	28	29	37	291	450	511	118	88	281	94	107	30
10	26	27	34	130	600	422	110	80	461	77	108	28
11	26	26	32	150	500	357	102	75	415	68	78	27
12	26	26	32	140	350	319	98	69	341	65	64	25
13	26	25	34	130	300	301	95	65	1290	81	56	25
14	24	25	39	120	260	323	94	62	869	154	51	41
15	23	25	60	90	230	446	89	59	408	94	48	57
16	24	24	74	60	300	585	84	60	257	74	44	38
17	24	26	69	65	700	634	82	61	203	81	47	31
18	25	28	79	100	1100	448	87	55	159	111	50	28
19	26	27	68	400	800	411	81	74	129	76	48	28
20	27	30	58	786	602	683	79	92	116	656	41	28
21	25	33	200	1100	478	851	80	78	100	197	36	31
22	25	31	250	711	368	767	75	67	105	115	34	35
23	37	27	350	540	286	542	70	71	105	107	32	34
24	54	34	400	384	247	403	68	162	87	118	34	29
25	49	42	280	289	213	316	70	267	79	89	71	27
26	48	42	180	208	184	283	169	112	79	71	70	27
27	75	41	130	201	227	235	196	97	110	61	50	34
28	90	41	110	161	238	202	207	106	112	63	41	34
29	61	39	90	139	---	183	190	90	94	76	36	29
30	51	37	75	130	---	168	161	75	142	67	32	26
31	45	---	110	150	---	160	---	71	---	71	68	---
TOTAL	1119	951	3087	11272	14533	12399	3493	2926	7270	3418	1747	1176
MEAN	36.1	31.7	99.6	364	519	400	116	94.4	242	110	56.4	39.2
MAX	90	42	400	1400	2300	851	207	267	1290	656	108	111
MIN	23	24	32	60	184	160	68	55	79	61	32	25
CFSM	.26	.23	.73	2.66	3.79	2.92	.85	.69	1.77	.80	.41	.29
IN.	.30	.26	.84	3.06	3.95	3.37	.95	.79	1.97	.93	.47	.32

CAL YR 1981 TOTAL 50185 MEAN 137 MAX 1890 MIN 12 CFSM 1.00 IN 13.63
WTR YR 1982 TOTAL 63391 MEAN 174 MAX 2300 MIN 23 CFSM 1.27 IN 17.21

03524000 CLINCH RIVER AT CLEVELAND, VA

LOCATION.--Lat 36°56'41", long 82°09'18", Russell County, Hydrologic Unit 06010205, on right bank 500 ft (152 m) upstream from highway bridge at Cleveland, 0.5 mi (0.8 km) downstream from Muddy Hollow, 2.3 mi (3.7 km) downstream from Weaver Creek, 4.4 mi (7.1 km) downstream from Thompson Creek, and at mile 271.6 (437.0 km).

DRAINAGE AREA.--528 mi² (1,368 km²).

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1921-23(M), 1926(M), 1929-31(M). WSP 1706: 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 1,500.24 ft (457.273 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1931, nonrecording gage on highway bridge 500 ft (152 m) downstream at datum 1.0 ft (0.30 m) lower.

REMARKS.--Records good. Tennessee Valley Authority gage-height Automatic Data Acquisition System at station, called at 6-hour intervals by computer at Knoxville, TN. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--62 years, 714 ft³/s (20.22 m³/s), 18.36 in/yr (466 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,500 ft³/s (977 m³/s) Apr. 5, 1977, gage height, 26.40 ft (8.047 m); minimum, 35 ft³/s (0.99 m³/s) Sept. 28, 1964; minimum gage height, 0.96 ft (0.293 m) Feb. 10, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 4	1230	6550	185	10.29	3.136
Feb. 4	0015	*8100	229	11.90	3.627
Feb. 18	1000	5230	148	8.84	2.694
June 13	1500	5860	166	9.55	2.911

Minimum discharge, 92 ft³/s (2.61 m³/s) Nov. 15, 16; minimum gage height, 1.45 ft (0.442 m) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	144	136	1160	1390	1490	644	610	1340	512	507	525
2	139	131	137	1000	1250	1410	595	548	1360	422	460	710
3	134	123	141	2520	5430	1370	562	557	839	350	365	464
4	132	118	141	5450	6010	1250	530	490	862	331	309	323
5	128	115	142	4320	2740	1160	494	430	2640	369	274	253
6	123	117	143	2100	1890	1110	503	397	1910	357	257	215
7	120	116	137	1610	1420	1630	494	369	1120	291	250	192
8	116	111	131	1630	1130	2390	447	393	1170	335	267	177
9	113	108	130	1330	1750	2040	451	369	3210	619	294	166
10	111	104	131	1050	2600	1760	443	335	3800	439	365	156
11	109	100	127	500	1950	1550	410	309	2770	335	323	151
12	107	98	120	560	1520	1360	389	287	1650	350	267	143
13	107	96	116	520	1330	1240	373	274	5010	323	237	138
14	103	94	121	480	1130	1250	369	260	4270	694	212	834
15	101	92	209	450	991	1410	354	247	2230	741	192	845
16	101	93	302	350	1330	1980	338	240	1480	468	194	377
17	101	97	298	220	3030	1960	331	244	1130	369	267	270
18	103	98	353	250	4870	1690	350	244	890	323	209	218
19	105	98	314	350	3340	1490	331	439	720	354	189	280
20	103	105	350	3090	2340	1860	312	553	610	801	183	222
21	103	107	732	3370	1940	3050	316	464	530	1180	169	197
22	101	106	1000	3370	1570	2940	298	365	503	600	164	189
23	116	104	1330	2380	1270	2180	280	354	512	464	156	189
24	153	104	1570	2060	1080	1690	270	451	434	464	161	175
25	155	116	1020	1550	943	1370	267	499	373	567	225	164
26	155	132	695	1220	812	1210	512	472	338	414	385	158
27	193	140	530	908	1190	1030	839	434	544	338	274	172
28	278	144	424	823	1780	879	1020	439	503	294	206	180
29	268	145	350	700	---	779	879	414	553	320	180	166
30	198	142	294	610	---	715	720	357	521	365	164	156
31	164	---	341	644	---	669	---	312	---	439	222	---
TOTAL	4159	3398	11965	46575	58026	47912	14121	12156	43822	14228	7927	8405
MEAN	134	113	386	1502	2072	1546	471	392	1461	459	256	280
MAX	278	145	1570	5450	6010	3050	1020	610	5010	1180	507	845
MIN	101	92	116	220	812	669	267	240	338	291	156	138
CFSM	.25	.21	.73	2.85	3.92	2.93	.89	.74	2.77	.87	.49	.53
IN.	.29	.24	.84	3.28	4.09	3.38	.99	.86	3.09	1.00	.56	.59

CAL YR 1981 TOTAL 167338 MEAN 458 MAX 4280 MIN 40 CFSM .87 IN 11.79
WTR YR 1982 TOTAL 272694 MEAN 747 MAX 6010 MIN 92 CFSM 1.42 IN 19.21

03528000 CLINCH RIVER ABOVE TAZEWELL, TN

LOCATION.--Lat 36°25'30", long 83°23'54", Claiborne County, Hydrologic Unit 06010205, on right bank 0.4 mi (0.6 km) upstream from Grissom Island, 4.6 mi (7.4 km) downstream from Big War Creek, 10 mi (16 km) east of Tazewell, and at mile 159.8 (257.1 km).

DRAINAGE AREA.--1,474 mi^2 (3,818 km^2).

PERIOD OF RECORD.--October 1918 to current year. Prior to April 1919 monthly discharge only, published in WSP 1306. Published as "near Lone Mountain" October 1918 to September 1927, as "near Tazewell" August 1927 to December 1936, and as "above Tazewell" July 1935 to current year. Gage-height record "near Tazewell" January 1937 to July 1941.

REVISED RECORDS.--WSP 803: Drainage area at site "near Tazewell." WSP 1306: Drainage area at site "near Lone Mountain." WSP 1336: 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,060.7 ft (323.30 m) National Geodetic Vertical Datum of 1929. Apr. 1, 1919, to Sept. 30, 1927, nonrecording gage on railroad bridge 23.3 mi (37.5 km) downstream at datum 102.7 ft (31.30 m) lower. Aug. 8, 1927, to July 16, 1941, water-stage recorder at site 8.0 mi (12.9 km) downstream at datum 47.2 ft (14.39 m) lower. Water-stage recorder at present site and datum since July 29, 1935.

REMARKS.--Records good.

AVERAGE DISCHARGE.--64 years, 2,102 ft^3/s (59.53 m^3/s), 19.37 in/yr (492 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,100 ft^3/s (2,780 m^3/s) Apr. 5, 1977, gage height, 29.32 ft (8.937 m), from floodmarks; minimum, 108 ft^3/s (3.06 m^3/s) Sept. 11, 1925; minimum gage height at present site and datum, 0.33 ft (0.101 m) Sept. 20, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1862 reached a stage of about 24 ft (7.3 m), present site and datum, from information by local resident, discharge, about 66,000 ft^3/s (1,870 m^3/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 14,000 ft^3/s (396 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Jan. 5	0730	*19400	549	11.85	3.612	Feb. 4	1500	16900	479	10.91	3.325

Minimum discharge, 221 ft^3/s (6.26 m^3/s) Oct. 17, 18, gage height, 0.74 ft (0.226 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	294	644	719	2870	3270	5860	1820	1790	2310	1430	1790	4630
2	294	542	741	3550	4460	4710	1700	1560	3890	1080	1360	5550
3	303	479	688	6120	7950	4120	1580	1410	3120	936	1020	3750
4	284	435	630	16400	16000	3750	1530	1330	2200	834	825	2240
5	321	402	587	18200	13500	3450	1460	1240	1910	753	677	1470
6	329	373	557	10700	7240	3170	1480	1120	4040	688	591	1050
7	309	352	527	5590	4920	5330	1540	1010	3580	651	523	815
8	296	342	510	3990	3710	7900	1500	962	2320	652	477	680
9	277	335	488	3550	4740	6950	1620	935	1900	619	457	591
10	265	327	459	3000	8310	5520	1770	903	4800	616	626	527
11	257	315	437	2230	7740	4610	1710	854	4720	947	785	480
12	252	305	414	1650	5540	3980	1580	783	4530	883	667	442
13	246	291	393	1550	4470	3480	1450	730	3350	863	586	416
14	241	284	426	1700	3890	3120	1360	696	6520	739	496	515
15	234	275	598	1620	3360	3130	1270	659	6840	647	446	8420
16	226	274	865	1370	3900	4180	1200	638	3930	889	407	5590
17	224	287	1060	953	7850	5450	1150	617	2880	958	399	2300
18	239	289	1220	857	12400	5270	1130	601	2270	730	724	1490
19	257	287	1230	1030	12000	4360	1070	618	1790	665	748	1090
20	255	300	1140	1400	8780	3860	1040	774	1470	571	538	887
21	247	313	811	7130	6210	6740	991	967	1240	607	431	839
22	248	324	1100	11500	4900	8100	943	1080	1080	1160	385	732
23	292	327	3080	10400	3910	6690	885	994	952	1200	365	649
24	397	392	5850	8880	3230	5100	832	908	918	836	374	602
25	410	472	5220	6560	2820	4030	806	1280	872	702	454	566
26	754	461	3510	4580	2430	3400	994	1150	781	672	873	548
27	1220	520	2600	3380	2740	2950	1420	1140	716	748	1040	512
28	1290	678	2070	2650	5450	2570	2180	1140	922	630	827	482
29	1070	822	1680	2280	---	2240	2280	1380	1110	615	636	465
30	921	747	1380	2000	---	2030	2120	1160	1600	646	510	454
31	802	---	1480	1970	---	1880	---	983	---	1210	572	---
TOTAL	13054	12194	42470	149660	175720	137930	42411	31412	78561	25177	20609	48782
MEAN	421	406	1370	4828	6276	4449	1414	1013	2619	812	665	1626
MAX	1290	822	5850	18200	16000	8100	2280	1790	6840	1430	1790	8420
MIN	224	274	393	857	2430	1880	806	601	716	571	365	416
CFSM	.29	.28	.93	3.28	4.26	3.02	.96	.69	1.78	.55	.45	1.10
IN.	.33	.31	1.07	3.78	4.43	3.48	1.07	.79	1.98	.64	.52	1.23

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CAL YR 1981   TOTAL  473934   MEAN  1298   MAX   9200   MIN 214   CFSM  .88   IN 11.96
WTR YR 1982   TOTAL  777980   MEAN  2131   MAX  18200   MIN 224   CFSM 1.45   IN 19.63
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TENNESSEE RIVER BASIN

03531500 POWELL RIVER NEAR JONESVILLE, VA

LOCATION.--Lat 36°39'43", long 83°05'42", Lee County, Hydrologic Unit 06010206, on right bank 175 ft (53 m) downstream from highway bridge, 2 mi (3 km) southeast of Jonesville, 10 mi (16 km) upstream from Wallen Creek, and at mile 143.1 (230.2 km).

DRAINAGE AREA.--319 mi² (826 km²).

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1033: 1932-44. WSP 1436: 1946(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,259.08 ft (383.768 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 541 ft³/s (15.32 m³/s), 23.03 in/yr (585 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s (1,610 m³/s) Apr. 5, 1977, gage height, 44.32 ft (13.509 m), from floodmark, from rating curve extended above 20,000 ft³/s (570 m³/s) on basis of slope-area measurement of peak flow; minimum, 17 ft³/s (0.48 m³/s) Sept. 19, 20, 1954, and as result of storage behind temporary dam Oct. 18, 1961; minimum gage height, 0.68 ft (0.207 m) Oct. 18, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Jan. 3	1930	7380	209	13.74	4.188	Sept. 14	2200	*7720	219	14.30	4.359
Jan. 4	1800	7480	212	13.90	4.237						

Minimum discharge, 52 ft³/s (1.47 m³/s) Oct. 16, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	135	130	946	1240	1150	431	403	873	550	584	1690
2	61	119	174	755	1010	1040	380	358	972	358	422	1690
3	62	106	154	4330	2750	942	385	337	601	277	277	1060
4	66	100	140	6260	3220	845	385	297	426	270	207	692
5	61	96	140	3310	1880	817	350	266	711	281	173	471
6	61	96	135	1630	1330	730	451	244	637	217	159	350
7	71	96	124	1260	1010	1790	451	227	456	179	143	277
8	65	89	119	1190	817	1960	426	241	354	293	126	230
9	61	82	113	984	1380	1420	539	230	394	354	316	198
10	57	78	106	790	2100	1150	567	201	354	277	756	173
11	57	76	98	496	1470	1010	528	182	316	300	329	157
12	57	73	90	561	1110	913	481	168	255	561	210	146
13	55	71	87	502	1040	823	436	157	389	362	165	141
14	55	69	106	461	879	806	408	148	461	255	141	2680
15	53	69	243	389	790	1100	385	141	329	204	123	3090
16	55	67	283	341	1430	1590	345	135	263	176	114	1080
17	55	68	250	200	3950	1730	333	201	376	159	224	679
18	62	71	321	220	3600	1270	350	162	304	148	244	491
19	104	70	294	300	2160	1040	316	217	234	165	146	398
20	117	68	215	925	1540	1060	304	263	201	195	118	333
21	74	70	250	3210	1220	1030	293	227	179	146	109	293
22	64	72	634	3140	1000	1010	270	241	165	126	112	270
23	76	66	2070	2660	812	862	255	312	191	168	99	248
24	166	73	2070	2530	698	763	244	408	159	270	146	214
25	154	92	1080	1590	613	667	248	341	133	210	517	198
26	215	90	724	1120	523	667	403	289	123	146	692	191
27	534	96	564	817	942	556	954	451	619	123	341	182
28	498	212	464	698	1530	486	839	385	422	293	230	165
29	313	177	383	578	---	441	619	466	1140	312	179	154
30	215	140	315	496	---	412	491	350	954	371	148	141
31	166	---	344	528	---	403	---	312	---	466	556	---
TOTAL	3766	2787	12220	43217	42044	30483	12867	8360	12991	8212	8106	18082
MEAN	121	92.9	394	1394	1502	983	429	270	433	265	261	603
MAX	534	212	2070	6260	3950	1960	954	466	1140	561	756	3090
MIN	53	66	87	200	523	403	244	135	123	123	99	141
CFSM	.38	.29	1.24	4.37	4.71	3.08	1.35	.85	1.36	.83	.82	1.89
IN.	.44	.33	1.43	5.04	4.90	3.55	1.50	.97	1.51	.96	.95	2.11

CAL YR 1981 TOTAL 120925 MEAN 331 MAX 5010 MIN 30 CFSM 1.04 IN 14.10
WTR YR 1982 TOTAL 203135 MEAN 557 MAX 6260 MIN 53 CFSM 1.75 IN 23.69

03532000 POWELL RIVER NEAR ARTHUR, TN

LOCATION.--Lat 36°32'30", long 83°37'49", Claiborne County, Hydrologic Unit 06010206, on left bank 500 ft (150 m) upstream from bridge on U.S. Highway 25E, 2.3 mi (3.7 km) east of Arthur, 2.4 mi (3.9 km) downstream from Indian Creek, and at mile 65.4 (105.2 km).

DRAINAGE AREA.--685 mi^2 (1,774 km^2).

PERIOD OF RECORD.--October 1919 to February 1982 (discontinued). Gage-height records collected at same site December 1892 to August 1893, September 1904 to March 1925 are in reports of the National Weather Service (published as "near Tazewell").

REVISED RECORDS.--WSP 1336: 1920, 1921(M), 1923.

GAGE.--Water-stage recorder. Datum of gage is 1,043.84 ft (318.162 m) Tennessee River Survey datum. Prior to July 23, 1927, nonrecording gage, and July 23, 1927, to Sept. 30, 1970, water-stage recorder, at same site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--62 years (water years 1919-81), 1,145 ft^3/s (32.43 m^3/s), 22.70 in/yr (577 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,500 ft^3/s (1,690 m^3/s) Apr. 6, 1977, gage height, 38.96 ft (11.875 m), from floodmark; minimum, 47 ft^3/s (1.33 m^3/s) Jan. 6, 1940, result of freezeup; minimum daily, 60 ft^3/s (1.70 m^3/s) Sept. 23, 1955; minimum gage height, 1.32 ft (0.402 m) Sept. 6, 1975, result of dredging.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1826 reached a stage of 29.5 ft (8.99 m), present datum, discharge, 34,000 ft^3/s (963 m^3/s), and flood of Jan. 29, 1918, reached a stage of 29.2 ft (8.90 m), present datum, discharge, 33,000 ft^3/s (935 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1981 to February 1982, 13,300 ft^3/s (377 m^3/s) at 1730 hours Jan. 4, gage height, 17.23 ft (5.252 m), no other peak above base of 9,000 ft^3/s (255 m^3/s); minimum, 136 ft^3/s (3.85 m^3/s) Oct. 18, gage height, 1.73 ft (0.527 m).

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1981 TO FEBRUARY 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	452	511	1410	1540							
2	169	382	662	1720	2000							
3	161	338	586	4620	2650							
4	161	306	517	11100	4910							
5	176	284	449	11200	4760							
6	203	275	404	6140	3170							
7	187	254	381	3220	2360							
8	173	236	363	2340	1880							
9	166	230	333	2050	2350							
10	171	220	309	1700	3520							
11	162	207	293	1430	3660							
12	155	197	274	1100	2730							
13	148	190	256	1070	2370							
14	146	184	265	1040	2200							
15	143	179	338	962	1900							
16	141	176	441	870	2520							
17	139	181	578	781	5390							
18	163	179	616	633	7480							
19	191	171	623	722	7100							
20	193	170	631	846	5400							
21	196	170	538	3590	3600							
22	231	165	877	6480	2800							
23	238	161	2050	6690	2200							
24	305	190	3660	5950	1800							
25	304	229	3270	4500	1600							
26	833	243	2030	2980	1400							
27	1220	285	1500	2150	1200							
28	1280	424	1220	1670	1500							
29	1010	446	1030	1450	---							
30	747	455	866	1270	---							
31	573	---	861	1190	---							
TOTAL	10253	7579	26732	92874	85990	---	---	---	---	---	---	---
MEAN	331	253	862	2996	3071	---	---	---	---	---	---	---
MAX	1280	455	3660	11200	7480	---	---	---	---	---	---	---
MIN	139	161	256	633	1200	---	---	---	---	---	---	---
CFSM	.48	.37	1.26	4.37	4.48	---	---	---	---	---	---	---
IN.	.56	.41	1.45	5.04	4.67	---	---	---	---	---	---	---

CAL YR 1981 TOTAL 245026 MEAN 671 MAX 6720 MIN 107 CFSM .98 IN 13.31

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1982

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		POTOMAC RIVER BASIN					
01622400	Buffalo Branch tributary near Christian, Va.	Lat 38°11'55", long 79°13'10", Augusta County, at culvert on State Highway 42, 1.3 mi north of Christian. Datum of gage is 1,622.53 ft National Geodetic Vertical Datum of 1929.	0.49	1967-82	3-20-82	4.36	84
01629945	Chub Run near Stanley, Va.	Lat 38°34'31", long 78°27'32", Page County, at culvert on State Highway 689, 2.2 mi east of Stanley. Datum of gage is 1,023.05 ft National Geodetic Vertical Datum of 1929.	3.16	a1959-69, 1970-82	6-13-82	1.52	110
01632970	Crooked Run near Mt. Jackson, Va.	Lat 38°45'44", long 78°41'06", Shenandoah County, at culvert on State Highway 263, 2.3 mi west of Mt. Jackson. Datum of gage is 962.84 ft National Geodetic Vertical Datum of 1929.	6.49	1972-82	2- 3-82	3.94	435
01633650	Pughs Run near Woodstock, Va.	Lat 38°55'48", long 78°32'43", Shenandoah County, at culvert on State Highway 623, 4.0 mi northeast of Woodstock. Datum of gage is 1,027.27 ft National Geodetic Vertical Datum of 1929.	3.66	1972-82	3-30-82	3.51	36
01653000	Cameron Run at Alexandria, Va.	Lat 38°48'23", long 77°06'36", Fairfax County, at left downstream side of Southern Railway bridge, at Alexandria, and 800 ft downstream from confluence of Holmes Run and Backlick Run. Datum of gage is 31.07 ft National Geodetic Vertical Datum of 1929.	33.7	1955-80‡, 1981-82	5-30-82	5.95	3,720
		GREAT WICOMICO RIVER BASIN					
01661600	Great Wicomico River near Horse Head, Va.	Lat 37°53'15", long 76°27'00", Northumberland County, at culvert on State Highway 604, 1.7 mi west of Horse Head.	6.98	1969-82	8- 7-82	4.98	696
		RAPPAHANNOCK RIVER BASIN					
01665050	Pony Mountain Branch near Culpeper, Va.	Lat 38°27'04", long 77°57'24", Culpeper County, at culvert on State Highway 3, 2.7 mi southeast of Culpeper.	.30	a1958-69, 1970-82	6-13-82	3.74	(*)

* Discharge not determined.

‡ Operated as a continuous-record gaging station.

a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		RAPPAHANNOCK RIVER BASIN--Continued					
01668300	Farmers Hall Creek near Champlain, Va.	Lat 38°00'05", long 76°58'40", Essex County, at culvert on U.S. Highway 17, 1.2 mi southeast of Champlain. Datum of gage is 42.10 ft National Geodetic Vertical Datum of 1929.	2.18	1966-82	8- 9-82	3.62	33
		PIANKATANK RIVER BASIN					
01669800	My Ladys Swamp near Saluda, Va.	Lat 37°34'34", long 76°31'30", Middlesex County, at culvert on State Highway 629, 4.4 mi southeast of Saluda. Datum of gage is 4.16 ft National Geodetic Vertical Datum of 1929.	4.81	1969-82	8- 8-82	5.33	165
		YORK RIVER BASIN					
01671615	Foster Creek near Ferncliff, Va.	Lat 37°57'35", long 78°11'20", Louisa County, at culvert on U.S. Highway 250, 4.6 mi northwest of Ferncliff. Datum of gage is 424.22 ft National Geodetic Vertical Datum of 1929.	.61	a1960-68, 1969-82	6-13-82	5.95	(*)
01671650	Waldrop Creek near Louisa, Va.	Lat 38°00'08", long 78°04'22", Louisa County, at culvert on State Highway 632, 4.2 mi southwest of Louisa. Datum of gage is 361.41 ft National Geodetic Vertical Datum of 1929.	2.85	1969-82	2- 3-82	5.00	170
01671750	Harris Creek near Trevilians, Va.	Lat 38°01'02", long 78°03'06", Louisa County, at culvert on State Highway 632, 2.7 mi southeast of Trevilians.	3.31	1969-82	2- 3-82	4.67	350
01674200	Reedy Creek near Dawn, Va.	Lat 37°52'55", long 77°21'35", Caroline County, at bridge on U.S. Highway 301, 3.3 mi north of Dawn.	16.8	1950-69, 1972-82	12- 5-81	3.93	121
01674700	Aylett Creek at Aylett, Va.	Lat 37°47'05", long 77°06'23", King William County, at culvert on U.S. Highway 360 at Aylett. Datum of gage is 26.72 ft National Geodetic Vertical Datum of 1929.	6.17	1969-82	8- 9-82	4.70	(*)
		JAMES RIVER BASIN					
02012950	Sweet Springs Creek tributary at Sweet Chalybeate, Va.	Lat 37°39'25", long 80°14'10", Allegheny County, at culvert on State Highway 311, 0.9 mi north of Sweet Chalybeate. Datum of gage is 1,926.94 ft National Geodetic Vertical Datum of 1929.	.66	1966-75, 1978-82	-	<4.14	(*)
02015600	Cowpasture River near Head Waters, Va.	Lat 38°19'30", long 79°26'14", Augusta County, at bridge on U.S. Highway 250, 1.2 mi west of Head Waters. Datum of gage is 1,985.65 ft National Geodetic Vertical Datum of 1929.	11.3	1949-82	3-20-82	4.90	680
02017300	Craig Creek at New Castle, Va.	Lat 37°30'06", long 80°06'18", Craig County, at bridge on State Highway 616, at New Castle. Datum of gage is 1,245.69 ft National Geodetic Vertical Datum of 1929.	112	1967-82	6-13-82	10.09	3,190

* Discharge not determined.

< Less than.

a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft³/s)
		JAMES RIVER BASIN--Continued					
02017700	Craig Creek tributary near New Castle, Va.	Lat 37°33'21", long 79°59'52", Craig County, at culvert on State Highway 606, 7.1 mi northeast of New Castle.	2.05	1968-82	2- 3-82	3.40	50
02018800	North Fork near Fincastle, Va.	Lat 37°32'07", long 79°56'03", Botetourt County, at culvert on State Highway 606, 3.9 mi northwest of Fincastle. Datum of gage is 1,248.65 ft National Geodetic Vertical Datum of 1929.	4.17	1968-82	2- 3-82	4.20	168
02020100	Renick Run near Buchanan, Va.	Lat 37°35'27", long 79°38'04", Botetourt County, at culvert on Frontage Road of Interstate Highway 81, 4.8 mi northeast of Buchanan. Datum of gage is 1,261.85 ft National Geodetic Vertical Datum of 1929.	2.06	1967-82	6-13-82	4.78	311
02021700	Cedar Grove Branch near Rockbridge Baths, Va.	Lat 37°53'00", long 79°23'10", Rockbridge County, at culvert on State Highway 39, 1.8 mi southeast of Rockbridge Baths. Datum of gage is 1,041.22 ft National Geodetic Vertical Datum of 1929.	12.3	1967-82	6-13-82	7.50	420
02023300	South River near Steeles Tavern, Va.	Lat 37°55'50", long 79°09'55", Augusta County, at bridge on State Highway 608, 3 mi east of Steeles Tavern.	15.7	1951-82	-	<3.67	<685
02027700	Buffalo River tributary near Amherst, Va.	Lat 37°33'45", long 78°57'35", Amherst County, at culvert on U.S. Highway 60, 5.2 mi southeast of Amherst. Datum of gage is 583.66 ft National Geodetic Vertical Datum of 1929.	.46	1966-82	6-13-82	3.17	25
02030800	Stockton Creek near Afton, Va.	Lat 38°01'48", long 78°48'30", Albemarle County, at culvert on State Highway 6, 1.7 mi east of Afton. Datum of gage is 835.27 ft National Geodetic Vertical Datum of 1929.	2.80	1967-82	6-13-82	4.74	90
02032200	Doyles River near Whitehall, Va.	Lat 38°12'10", long 78°40'17", Albemarle County, at bridge on State Highway 810, 5.9 mi north of Whitehall. Datum of gage is 928.08 ft National Geodetic Vertical Datum of 1929.	6.70	1967-82	-	<10.10	(*)
02032300	Muddy Run near Stanardsville, Va.	Lat 38°14'05", long 78°37'02", Albemarle County, at bridge on State Highway 810, 11 mi southwest of Stanardsville. Datum of gage is 756.79 ft National Geodetic Vertical Datum of 1929.	3.36	1967-82	6-13-82	7.11	(*)
02032540	Haneytown Creek near Stanardsville, Va.	Lat 38°16'48", long 78°30'50", Greene County, at bridge on State Highway 810, 4.5 mi west of Stanardsville. Datum of gage is 616.34 ft National Geodetic Vertical Datum of 1929.	4.45	1967-82	6-13-82	12.61	(*)
02032550	Lynch River at Nortonsville, Va.	Lat 38°14'16", long 78°32'32", Albemarle County, at bridge on State Highway 810, 7 mi southwest of Stanardsville. Datum of gage is 591.70 ft National Geodetic Vertical Datum of 1929.	13.6	1967-82	6-13-82	13.21	(*)

* Discharge not determined.
< Less than.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft³/s)
		JAMES RIVER BASIN--Continued					
02032700	Schenks Branch at Charlottesville, Va.	Lat 38°02'32", long 78°28'30", Charlottesville City, at bridge just upstream from U.S. Highway 250 bypass. Datum of gage is 371.63 ft National Geodetic Vertical Datum of 1929.	1.34	1950-77, 1979-82	5-28-82	6.27	(*)
02033300	Moores Creek near Charlottesville, Va.	Lat 38°00'25", long 78°34'25", Albemarle County, at culvert on access road, 150 ft north of U.S. Highway 29, and 4 mi southwest of Charlottesville.	3.52	1967-77, 1979-82	-	<13.81	<185
02037800	Falling Creek near Midlothian, Va.	Lat 37°27'15", long 77°35'20", Chesterfield County, at bridge on State Highway 653, 4 mi southeast of Midlothian. Datum of gage is 170.06 ft National Geodetic Vertical Datum of 1929.	18.1	1951-82	3- 7-82	3.97	257
02040500	Flat Creek near Amelia, Va.	Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia.	73.0	1946-70, 1972-82	6- 5-82	7.42	(*)
02042250	Bailey Branch tributary at Spring Grove, Va.	Lat 37°10'29", long 76°59'13", Surry County, at culvert on State Highway 10, 1.0 mi northwest of Spring Grove. Datum of gage is 61.39 ft National Geodetic Vertical Datum of 1929.	.71	1967-82	-	<2.28	<12
02042300	Horsepen Branch at Richmond, Va.	Lat 37°35'45", long 77°30'40", Henrico County, at culvert on U.S. Highway 250 (Broad Street), at Richmond.	1.35	1965-82	12-15-81	4.28	876
02042400	Jordans Branch at Richmond, Va.	Lat 37°35'10", long 77°29'55", Henrico County, at bridge on U.S. Highway 250 (Broad Street), at Richmond.	2.41	1965-82	7-12-82	10.88	(*)
02042780	West Bra[illegible] Long Hill Swamp near Lightfoot, Va.	Lat 37°18'50", long 77°46'01", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot.	2.47	1970-76, 1978-82	8- 8-82	4.00	120
		CHOWAN RIVER BASIN					
02044200	Falls Creek tributary near Victoria, Va.	Lat 37°02'04", long 78°10'26", Lunenburg County, at culvert on State Highway 49, 3.6 mi northeast of Victoria.	.34	1962-82	5-24-82	4.42	73
02046500	Anderson Branch at Sussex, Va.	Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex. Datum of gage is 58.00 ft National Geodetic Vertical Datum of 1929.	5.35	1949-56‡, 1967-82	7-17-82	6.64	298
02050050	Blackwater River tributary near Holland, Va.	Lat 36°38'44", long 76°51'29", Nansemond County, at culvert on State Highway 189, 4.9 mi southwest of Holland. Datum of gage is 29.25 ft National Geodetic Vertical Datum of 1929.	2.76	1967-82	10-25-81	5.33	133
		ROANOKE RIVER BASIN					
02057700	Powder Mill Creek at Rocky Mount, Va.	Lat 37°00'26", long 79°52'25", Franklin County, at culvert on U.S. Highway 220 bypass at Rocky Mount.	.64	1967-82	6-13-82	14.50	115

* Discharge not determined.
‡ Operated as a continuous-record gaging station.
< Less than.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Dis-charge (ft³/s)
		ROANOKE RIVER BASIN--Continued					
02065100	Snake Creek near Brookneal, Va.	Lat 37°00'42", long 78°57'52", on U.S. Highway 501, 2.1 mi south of Brookneal.	1.68	1967-82	10-27-81	7.77	447
02065300	Right Hand Fork near Appomattox, Va.	Lat 37°16'12", long 78°49'14", Appomattox County, at culvert on State Highway 727, 5.2 mi south of Appomattox.	2.08	1967-82	2- 3-82	6.02	171
02075350	Powells Creek near Turbeville, Va.	Lat 36°34'50", long 79°11'20", Halifax County, at culvert on U.S. Highway 58, 8.8 mi southwest of Turbeville. Datum of gage is 383.95 ft National Geodetic Vertical Datum of 1929.	.28	a1958-69, 1970-82	10-26-81	4.34	190
02076200	Bearskin Creek near Chatham, Va.	Lat 36°50'30", long 79°29'05", Pittsylvania County, at culvert on State Highway 57, 4.5 mi west of Chatham.	4.06	1967-82	5-26-82	4.10	212
02076700	Blacks Creek near Mt. Airy, Va.	Lat 36°56'40", long 79°09'56", Pittsylvania County, at culvert on State Highway 40, 1.5 mi east of Mt. Airy.	3.44	1966-82	1- 4-82	4.97	207
		KANAWHA RIVER BASIN					
03165500	New River at Ivanhoe, Va.	Lat 36°50'05", long 80°57'10", Wythe County, on left bank at Ivanhoe, 2.1 mi downstream from Big Branch, and 2.3 mi upstream from Cripple Creek. Datum of gage is 1,943.09 ft National Geodetic Vertical Datum of 1929.	1,340	1927*, 1929-78*, 1979-82	2- 3-82	11.30	20,800
03165700	Cripple Creek at Cedar Springs, Va.	Lat 36°49'31", long 81°16'45", Wythe County, at bridge on State Highway 749, 0.6 mi southeast of Cedar Springs.	11.3	1967-82	-	<13.9	<360
03167300	Mira Fork tributary near Dugspur, Va.	Lat 36°50'16", long 80°35'47", Carroll County, at culvert on U.S. Highway 221, 2.2 mi northeast of Dugspur. Datum of gage is 2,602.96 ft National Geodetic Vertical Datum of 1929.	.62	1967-82	-	<2.8	<45
03167700	Beaverdam Creek at Hillsville, Va.	Lat 36°46'05", long 80°43'33", Carroll County, at culvert on State Highway 1009, 0.2 mi east of Hillsville corporate limits. Datum of gage is 2,373.04 ft National Geodetic Vertical Datum of 1929.	4.75	1962-82	7-15-82	4.68	345
03168750	Thorne Springs Branch near Dublin, Va.	Lat 37°05'30", long 80°44'34", Pulaski County, at pond dam just upstream from U.S. Highway 11, 3.3 mi southwest of Dublin.	4.77	a1957-69, 1970-82	2- 3-82	1.84	69
03171500	New River at Eggleston, Va.	Lat 37°17'22", long 80"37'01", Giles County, on left bank 50 ft downstream from highway bridge at Eggleston. Datum of gage is 1,615.59 ft National Geodetic Vertical Datum of 1929.	2,941	1915-76*, 1977-82	2- 4-82	14.56	38,900

* Operated as a continuous-record gaging station.
< Less than.
a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

Annual maximum discharge at crest-stage partial-record stations during water year 1982- Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft³/s)
		BIG SANDY RIVER BASIN					
03208800	Pound River above Indian Creek at Pound, Va.	Lat 37°07'26", long 82°36'29", Wise County, on left bank at Pound, 1,600 ft downstream from confluence of North and South Fork, 0.5 mi upstream from U.S. Highway 23, and 0.7 mi above Indian Creek. Datum of gage is 1,535.64 ft National Geodetic Vertical Datum of 1929.	36.7	1966-78*, 1979-82	9-14-82	18.83	3,310
03208850	Pound River below Bold Camp Creek, at Pound, Va.	Lat 37°07'19", long 82°35'55", Wise County, on left bank at Pound, 1,000 ft upstream from State Highway 83, 0.3 mi below Bold Camp Creek, and 0.5 mi below Indian Creek. Datum of gage is 1,527.36 ft National Geodetic Vertical Datum of 1929.	61.2	1966-78*, 1979-82	9-14-82	23.64	5,440
03213590	Knox Creek at Kelsa, Va.	Lat 37°27'02", long 82°03'34", Buchanan County, on left bank at bridge on State Highway 697, 0.3 mi downstream from Pawpaw Creek, and 0.8 mi northeast of Kelsa.	84.3	1980-81*, 1982	2- 3-82	7.24	1,720
		TENNESSEE RIVER BASIN					
03471200	South Fork Holston River at Teas, Va.	Lat 36°46'22", long 81°27'05", Smyth County, at bridge on State Highway 601, at Teas. Datum of gage is 2,496.98 ft National Geodetic Vertical Datum of 1929.	31.1	1967-82	1- 4-82	11.49	365
03472500	Beaverdam Creek at Damascus, Va.	Lat 36°37'40", long 81°47'28", Washington County, at Damascus, 0.6 mi upstream from mouth. Datum of gage is 1,946.66 ft National Geodetic Vertical Datum of 1929.	56.0	1948-59*, 1960-82	2- 3-82	4.80	2,320
03473500	Middle Fork Holston River at Groseclose, Va.	Lat 36°53'19", long 81°20'51", Smyth County, 10 ft downstream from bridge on State Highway 679, at Groseclose. Datum of gage is 2,442.86 ft National Geodetic Vertical Datum of 1929.	7.39	1948-57*, 1958-82	2- 3-82	3.61	124
03474000	Middle Fork Holston River at Seven Mile Ford, Va.	Lat 36°48'26", long 81°37'20", Smyth County, on right bank at downstream side of bridge on U.S. Highway 11, at Seven Mile Ford, and 0.3 mi upstream from Meade Creek. Datum of gage is 1,960.00 ft National Geodetic Vertical Datum of 1929.	132	1942-81*, 1982	6-13-82	4.06	2,960
03474700	Hutton Creek near Chilhowie, Va.	Lat 36°47'00", long 81°44'05", Washington County, at bridge on U.S. Highway 11, 3.3 mi southwest of Chilhowie.	8.32	1967-82	2- 3-82	10.89	268
03474800	Hall Creek near Glade Spring, Va.	Lat 36°45'47", long 81°48'15", Washington County, at bridge on U.S. Highway 11, 2.5 mi south of Glade Spring.	7.90	1967-82	2- 3-82	10.17	408
03475600	Cedar Creek near Meadowview, Va.	Lat 36°44'50", long 81°51'20", Washington County, at culvert on U.S. Highway 11, 1.2 mi south of Meadowview. Datum of gage is 2,034.66 ft National Geodetic Vertical Datum of 1929.	3.38	1967-82	8- 9-82	6.40	47

* Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		TENNESSEE RIVER BASIN--Continued					
03475700	Spring Creek near Abingdon, Va.	Lat 36°40'43", long 82°02'29", Washington County, at culvert on U.S. Highway 11, 3.8 mi southwest of Abingdon. Datum of gage is 1,977.54 ft National Geodetic Vertical Datum of 1929.	2.99	1967-82	8- 9-82	5.34	296
03487800	Lick Creek near Chatham Hill, Va.	Lat 36°57'44", long 81°28'21", Smyth County, 270 ft upstream from bridge on State Highway 42, 2.9 mi east of Chatham Hill. Datum of gage is 2,076.97 ft National Geodetic Vertical Datum of 1929.	25.5	1966-68*, 1969-82	1- 4-82	5.52	1,170
03488450	Brumley Creek at Brumley Gap, Va.	Lat 36°47'30", long 82°01'10", Washington County, on left bank 20 ft downstream from bridge on State Highway 611, 0.2 mi above mouth, and 0.8 mi southeast of Brumley Gap. Datum of gage is 1,489.16 ft National Geodetic Vertical Datum of 1929.	21.1	1979-81*, 1982	6-13-82	4.94	693
03489800	Cove Creek near Shelleys, Va.	Lat 36°39'13", long 82°21'16", Scott County, at bridge on U.S. Highway 58, 2 mi north of Shelleys. Datum of gage is 1,381.53 ft National Geodetic Vertical Datum of 1929.	17.3	1951-82	2- 3-82	5.58	722
03489870	Big Moccasin Creek at Collinwood, Va.	Lat 36°44'16", long 82°19'25", Russell County, at bridge on State Highway 612, at Collinwood. Datum of gage is 1,796.34 ft National Geodetic Vertical Datum of 1929.	41.9	1967-68*, 1969-82	2- 3-82	4.94	2,050
03490000	North Fork Holston River near Gate City, Va.	Lat 36°36'31", long 82°34'05", Scott County, on left bank 75 ft upstream from bridge on U.S. Highway 23, 1.6 mi downstream from Big Moccasin Creek, and 2.1 mi southeast of Gate City. Datum of gage is 1,197.56 ft National Geodetic Vertical Datum of 1929.	672	1931-81*, 1982	2- 4-82	11.01	14,300
03524500	Guest River at Coeburn, Va.	Lat 36°55'45", long 82°27'23", Wise County, on right bank 30 ft downstream from bridge on State Highway 72, 1.0 mi southeast of Coeburn, and 6.3 mi above mouth. Datum of gage is 1,925.80 ft National Geodetic Vertical Datum of 1929.	87.3	1949-59*, 1959-78, 1979-81*, 1982	9-14-82	9.48	2,980
03524900	Stony Creek at Ka, Va.	Lat 36°48'57", long 82°37'02", Scott County, on left bank along State Highway 619, at Ka, and 4.2 mi above mouth.	30.9	1980-81*, 1982	9-14-82	7.23	7,620
03526000	Copper Creek near Gate City, Va.	Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of highway bridge, 2.6 mi northeast of Gate City. Datum of gage is 1,301.95 ft National Geodetic Vertical Datum of 1929.	106	1948-72*, 1973-82	2- 3-82	9.17	2,560
03527000	Clinch River at Speers Ferry, Va.	Lat 36°38'55", long 82°45'02", Scott County, on right bank 200 ft downstream from bridge on U.S. Highway 58, 0.5 mi downstream from Copper Creek, and 0.8 mi northwest of Speers Ferry. Datum of gage is 1,196.52 ft National Geodetic Vertical Datum of 1929.	1,126	1920-76*, 1977-78, 1979-81*, 1982	2-18-82	16.10	15,300

* Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft³/s)
		TENNESSEE RIVER BASIN--Continued					
03529500	Powell River at Big Stone Gap, Va.	Lat 36°52'08", long 82°46'32", Wise County, on right bank 10 ft upstream from bridge on U.S. Highway 23, at Big Stone Gap, and 1.0 mi upstream from South Fork Powell River. Datum of gage is 1,459.07 ft National Geodetic Vertical Datum of 1929.	112	1945-59*, 1960-77, 1979-81*, 1982	9-14-82	7.83	5,950
03530500	North Fork Powell River at Pennington Gap, Va.	Lat 36°46'26", long 83°01'59", Lee County, near right bank on downstream side of bridge on State Highway 621, 0.8 mi north of Pennington Gap, and 4.7 mi above mouth. Datum of gage is 1,363.02 ft National Geodetic Vertical Datum of 1929.	71.4	1945-51*, 1952-77, 1979-81*, 1982	1-14-82	6.42	2,440

* Operated as a continuous-record gaging station.

Coal-monitoring partial-record stations in Southwest Virginia

The following table contains discharge measurements made at coal-monitoring partial-record stations. These measurements were made at the time water-quality samples were collected. The results of these samples are given in the table headed "Analyses of samples collected at partial-record, special study, and miscellaneous sites".

Discharge measurements made at coal-monitoring partial-record stations during water year 1982

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		BIG SANDY RIVER BASIN				
Russell Fork	Levisa Fork	Lat 37°04'38", long 82°03'47", Buchanan County, off State Highway 80, just above Ball Creek, and 0.5 mi southeast of Council.	2.83	1981	8-25-82	0.52
Ball Creek	Russell Fork	Lat 37°05'12", long 82°02'05", Buchanan County, above mouth of Nance White Branch, 2.0 mi northeast of Council.	.91	1981	6-28-82 7-27-82 8-24-82 9-29-82	.86 .24 .28 .15
Nance White Branch	Ball Creek	Lat 37°05'13", long 82°02'07", Buchanan County, at mouth, 2.0 mi northeast of Council.	1.13	1981	6-28-82 7-27-82 8-24-82 8-24-82 9-29-82	.57 .033 .031 .11 .066
03208033 Unnamed tributary	Grissom Creek	Lat 37°06'18", long 82°03'00", Buchanan County, 0.1 mi above mouth, 2.1 mi northeast of Council.	.88	-	8-24-82	.11
Grissom Creek	Ball Creek	Lat 37°06'12", long 82°03'02", Buchanan County, below unnamed tributary, 1.9 mi northeast of Council.	1.44	1981	6-27-82 7-27-82 8-24-82 8-24-82 9-29-82	.88 .047 .055 .095 .14
03208034 Grissom Creek	Ball Creek	Lat 37°04'43", long 82°02'25", Buchanan County, near mouth, 1.7 mi east of Council.	2.82	1981	8-24-82	.13
032080351 Barton Fork	Ball Creek	Lat 37°04'38", long 82°01'41", Buchanan County, above Jackson Fork, 2.3 mi east of Council.	.31	1981	8-25-81† 6-28-82 7-27-82 8-24-82 9-28-82	.022 .24 .060 .040 .055
032080352 Jackson Fork	Barton Fork	Lat 37°04'35", long 82°01'41", Buchanan County, 100 ft above mouth, 2.3 mi east of Council.	.33	1981	8-25-81† 6-28-82 7-27-82 8-24-82 9-28-82	.009 .20 .030 .010 .026
032080353 Coon Flat Branch	Barton Fork	Lat 37°04'41", long 82°01'49", Buchanan County, above mouth, 2.3 mi east of Council.	.22	-	8-24-82	.025
Jackson Fork	Barton Fork	Lat 37°04'38", long 82°01'43", Buchanan County, at mouth, 2.4 mi east of Council.	.64	1981	8-24-82	.055
Unnamed tributary	Barton Fork	Lat 37°04'34", long 82°02'10", Buchanan County, 0.1 mi above mouth, 1.9 mi east of Council.	.17	1981	6-28-82 7-27-82 8-24-82 9-29-82	.090 .010 .0059 .011
03208036 Barton Fork	Ball Creek	Lat 37°04'37", long 82°02'21", Buchanan County, 200 ft above mouth, 1.7 mi east of Council.	1.23	1981	8-24-82	.24
03208039 Ball Creek	Russell Fork	Lat 37°04'40", long 82°03'45", Buchanan County, at mouth, 0.5 mi east of Council.	7.26	1981	8-26-82	2.3
03208040 Russell Fork	Levisa Fork	Lat 37°04'40", long 82°03'57", Buchanan County, at State Highway 80, at Council.	10.2	1978, 1981	8-25-82	18
Big Branch	Russell Fork	Lat 37°05'04", long 82°05'01", Buchanan County, 0.1 mi above mouth, 0.8 mi west of Council.	.97	1981	6-29-82 7-27-82 8-25-82 9-28-82	.36 .033 .98 .10

† Not previously published.

Discharge measurements made at coal-monitoring partial-record stations during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		BIG SANDY RIVER BASIN--Continued				
Hurricane Creek	Russell Fork	Lat 37°07'58", long 82°04'25", Buchanan County, above Left Fork, 4.1 mi northeast of Davenport.	1.76	1981	6-28-82	6.3
					7-27-82	.069
					8-25-82	2.0
					9-28-82	.25
Left Fork	Hurricane Creek	Lat 37°08'01", long 82°04'31", Buchanan County, 200 ft above mouth, 4.0 mi northeast of Davenport.	.89	1980-81	6-28-82	5.1
					7-27-82	.058
					8-25-82	4.5
					9-28-82	.13
Parett Fletcher Branch	Hurricane Creek	Lat 37°07'29", long 82°04'49", Buchanan County, at mouth, 3.5 mi northeast of Davenport.	.48	1981	6-28-82	.21
					7-27-82	.019
					8-25-82	1.3
					9-28-82	.069
Left Fork Hurricane Creek	Hurricane Creek	Lat 37°08'46", long 82°06'29", Buchanan County, above New Camp Branch, 3.3 mi northeast of Davenport.	1.18	1981	6-29-82	5.3
					7-27-82	.18
					8-26-82	.50
					9-28-82	.25
Boyd Branch	Left Fork Hurricane Creek	Lat 37°07'54", long 82°07'00", Buchanan County, 0.1 mi above mouth, 2.5 mi northeast of Davenport.	.68	1981	6-29-82	2.0
					7-27-82	.012
					8-26-82	.092
					9-28-82	.063
Ivy Lick Branch	Left Fork Hurricane Creek	Lat 37°07'16", long 82°07'25", Buchanan County, at mouth 1.8 mi northeast of Davenport.	.74	1981	6-29-82	1.1
					7-27-82	.018
					8-26-82	.12
					9-28-82	.076
03208050 Hurricane Creek	Russell Fork	Lat 37°06'05", long 82°08'12", Buchanan County, at bridge on State Highway 80, 400 ft upstream from mouth, and at Davenport.	16.3	1978	8-25-82	13
Little Indian Creek	Indian Creek	Lat 37°02'55", long 82°05'03", Buchanan County, at State Highway 602, at mouth, and 2.3 mi south of Council.	1.01	1981	6-27-82	.48
					7-27-82	.038
					8-24-82	.076
					9-29-82	.17
Puncheon Camp Branch	Indian Creek	Lat 37°04'13", long 82°06'54", Buchanan County, at mouth, 2.6 mi southwest of Council.	.80	1981	6-27-82	.32
					7-27-82	.067
					8-24-82	.019
					9-29-82	.063
Unnamed tributary	Indian Creek	Lat 37°04'55", long 82°08'32", Buchanan County, at State Highway 602, near mouth, and 0.5 mi east of Duty.	.39	1981	6-28-82	.28
					7-27-82	.11
					8-24-82	.10
					9-29-82	.23
Cane Creek	Indian Creek	Lat 37°06'16", long 82°10'41", Dickenson County, above unnamed tributary, 2.4 mi southwest of Duty.	1.73	1981	6-28-82	.74
					7-27-82	0
					8-25-82	1.3
					9-29-82	.010
Unnamed tributary	Cane Creek	Lat 37°03'16", long 82°10'41", Dickenson County, at mouth, 2.3 mi southwest of Duty.	.46	1981	6-28-82	.23
					7-27-82	.00028
					8-25-82	0
					9-29-82	0
Cane Creek	Indian Creek	Lat 37°04'08", long 82°09'37", Dickenson County, above Tiller Fork, 1.0 mi southwest of Duty.	2.96	1981	8-25-82	1.3
Tiller Fork	Cane Creek	Lat 37°04'00", long 82°09'23", Dickenson County, above Left Fork, 1.0 mi south of Duty.	1.73	1981	6-28-82	2.1
					7-27-82	.90
					8-24-82	.29
					9-29-82	.44
Left Fork	Tiller Fork	Lat 37°04'01", long 82°09'20", Dickenson County, at mouth, 1.0 mi south of Duty.	1.02	1981	6-28-82	1.1
					7-27-82	.14
					8-24-82	.14
					9-29-82	.20
Unnamed tributary	Cane Creek	Lat 37°04'18", long 82°09'43", Dickenson County, at mouth, 0.8 mi south of Duty.	.64	1981	6-28-82	.37
					7-27-82	.033
					8-24-82	.020
					9-29-82	.027

Discharge measurements made at coal-monitoring partial-record stations during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		BIG SANDY RIVER BASIN--Continued				
03208070 Indian Creek	Russell Fork	Lat 37°06'35", long 82°09'30", Dickenson County, at mouth, 1.3 mi northwest of Davenport.	21.1	1978, 1981	8-26-82	8.2
Big Branch	Russell Fork	Lat 37°06'46", long 82°10'03", Dickenson County, at State Highway 80, 1.0 mi south of Murphy.	1.10	1981	6-28-82	.22
					7-27-82	.024
					8-25-82	.98
					8-26-82	.57
					9-28-82	.097
Abner Branch	Russell Fork	Lat 37°06'54", long 82°10'20", Dickenson County, at mouth, at Bee, and 0.8 mi south of Murphy.	2.01	1981	6-28-82	.86
					7-27-82	.042
					8-26-82	.59
					9-28-82	.14
Fox Creek	Russell Fork	Lat 37°09'43", long 82°10'21", Buchanan County, above Left Fork, 2.5 mi north of Murphy.	3.68	1981	6-29-82	9.1
					7-26-82	.20
					8-25-82	8.3
					9-29-82	.29
Left Fork	Fox Creek	Lat 37°09'46", long 82°10'23", Buchanan County, at mouth, 2.5 mi north of Murphy.	1.69	1981	6-29-82	2.0
					7-26-82	.033
					8-25-82	3.7
					9-29-82	.14
Pawpaw Creek	Russell Fork	Lat 37°10'05", long 82°11'58", Buchanan County, above Hackney Hollow, 3.1 mi south of Prater.	4.12	1981	6-29-82	0
					7-26-82	.17
					8-25-82	9.3
					9-29-82	.34
03208088 Hackney Hollow tributary	Pawpaw Creek	Lat 37°10'06", long 82°12'02", Buchanan County, 0.1 mi above mouth, 2.6 mi northeast of Colley.	1.44	1980-81	6-29-82	0
					7-26-82	.0040
					8-25-82	5.4
					9-29-82	.11
03208089 Little Pawpaw Creek	Pawpaw Creek	Lat 37°10'00", long 82°12'17", Buchanan County, at culvert on State Highway 605, 200 ft upstream from mouth, and 2.4 mi northeast of Colley.	1.36	1979-81	6-29-82	2.5
					7-26-82	.045
					8-25-82	2.4
					9-29-82	.14
Laurel Branch (North)	Russell Fork	Lat 37°10'19", long 82°14'11", Dickenson County, at State Highway 605, at mouth, at Viers, and 1.3 mi north of Colley.	1.43	1981	6-29-82	1.3
					7-26-82	.035
					8-25-82	.91
					9-29-82	.10
03208100 Russell Fork	Levisa Fork	Lat 37°09'49", long 82°15'20", Dickenson County, above Fryingpan Creek, 1.1 mi southeast of Birchleaf.	87.4	1978, 1981	8-26-82	42

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream when continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1982

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN				
01613570	Back Creek at at Gainesboro, Va.	Lat 37°17'09", long 78°15'51", Frederick County, at bridge on State Highway 684, 0.25 mi above Winchester and Western Railroad, and 0.7 mi northwest of Gainesboro.	-	1951-54	7-14-82	5.5
01621000	Dry River at Rawley Springs, Va.	Lat 38°30'10", long 79°03'14", Rockingham County, at bridge on State Highway 847, at Rawley Springs, and 1.2 mi below Harrisonburg Reservoir.	72.6	1946-48*, 1952-55, 1963	7-15-82	44
01622230	Middle River at Trimbles Mill, near Swoope, Va.	Lat 38°08'10", long 79°13'06", Augusta County, at bridge on State Highway 707, at Trimbles Mill, and 1.7 mi southwest of Swoope.	-	-	7-15-82	7.0
01631500	North Fork Shenandoah River at Fulks Run, Va.	Lat 38°40'18", long 78°55'47", Rockingham County, at bridge on State Highway 917, 0.75 mi above Little Dry River, and 0.8 mi northwest of old site of Fulks Run.	-	1952-54	7-15-82	5.2
01632840	Smith Creek near Lacey Spring, Va.	Lat 38°32'18", long 78°45'03", Rockingham County, at low-water culvert on State Highway 717, 0.4 mi above Dry Fork, and 0.9 mi east of Lacey Spring.	-	-	7-15-82	8.0
01633485	Stony Creek near near Liberty Furnace, Va.	Lat 38°53'41", long 78°39'57", Shenandoah County, along State Highway 717, 0.15 mi above Little Stony Creek, and 2.4 mi northeast of Liberty Furnace.	57.0	1968-69	7-14-82	10
01635250	Passage Creek near Detrick, Va.	Lat 38°47'49", long 78°27'42", Shenandoah County, at bridge on State Highway 776, 0.4 mi above Buck Run, and 4.0 mi southwest of Detrick.	-	1963	7-14-82	4.9
01636270	Bordon Marsh Run near Boyce, Va.	Lat 39°00'09", long 78°05'51", Warren County, at culvert on State Highway 624, 1.1 mi above mouth, and 6.6 mi southwest of Boyce.	-	-	7-14-82	3.4
01643643	Goose Creek at Delaplane, Va.	Lat 38°54'51", long 77°55'19", Fauquier County, at bridge on U.S. Highway 17, just below Crooked Run, and at Delaplane.	45.6	1952-54, 1969, 1981	10-22-81 7-28-82	1.4 7.3
01643800	North Fork Goose Creek near Lincoln, Va.	Lat 39°04'38", long 77°41'52", Loudoun County, at bridge on State Highway 722, 0.6 mi above Crooked Run, and 2.5 mi south of Lincoln.	-	1952-54, 1981	10-22-81 7-28-82	1.2 5.6
01653700	Little Hunting Creek at Gum Springs, Va.	Lat 38°44'21", long 77°05'20", Fairfax County, 50 ft downstream from U.S. Highway 1, at Gum Springs.	1.78	1960, 1962-63, 1977, 1980-81	10- 1-81 8- 2-82	.25 .42
01653800	Dogue Creek near Accotink, Va.	Lat 38°43'08", long 77°07'44", Fairfax County, at bridge on U.S. Highway 1, 1.8 mi northeast of Accotink.	10.6	1960-63, 1977, 1980-81	10- 1-81 8- 2-82	.42 1.7

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
01656200	Broad Run near Warrenton, Va.	Lat 38°48'25", long 77°48'47", Fauquier County, at culvert on U.S. Highway 17, 2.1 mi above Piney Branch, and 7.0 mi north of Warrenton.	2.94	1953-54, 1956, 1959-61, 1976, 1981	10-22-81 7-28-82	0 .40
01657890	Neabsco Creek tributary near Dale City, Va.	Lat 38°37'13", long 77°16'35", Prince William County, at bridge on State Highway 638, 0.5 mi above mouth, and 2.0 mi southeast of Dale City.	3.33	1980-81	10- 1-81 8- 2-82	1.1 1.2
01660670	Accokeek Creek near Brooke, Va.	Lat 38°22'38", long 77°21'26", Stafford County, 200 ft above bridge on State Highway 609, 1.3 mi southeast of Brooke, and 4.4 mi above mouth.	18.0	1980-81	11-16-81 8- 2-82	2.7 1.6
01660765	Upper Machodoc Creek near Dahlgren, Va.	Lat 38°18'57", long 77°05'20", King George County, at bridge on State Highway 616, 1.6 mi below Pepper Mill Creek, and 2.0 mi southwest of Dahlgren.	26.2	1980-81	7-26-82	2.3
01660870	Fox Hall Swamp near Potomac Mills, Va.	Lat 38°09'24", long 76°57'43", Westmoreland County, at bridge on State Highway 639, 0.2 mi above Bundys Swamp, and 1.2 mi southwest of Potomac Mills.	2.28	1980-81	11-16-81 7-26-82	.67 .30
01661160	Nomini Creek near Neenah, Va.	Lat 38°02'28", long 76°10'22", Westmoreland County, at culvert on State Highway 600, 0.5 mi below Antioch Branch, and 1.0 mi southeast of Neenah.	9.99	1980-81	11-17-81 7-28-82	5.9 4.0
		RAPPAHANNOCK RIVER BASIN				
01661840	Rappahannock River near Flint Hill, Va.	Lat 38°45'32", long 78°01'42", Rappahannock and Fauquier Counties, at bridge on State Highway 647, 0.1 mi below Jordan River, and 4.0 mi east of Flint Hill.	-	1943, 1950-54, 1963, 1976-77, 1981	10-21-81 7-28-82	3.5 15
01662110	Hazel River near Woodville, Va.	Lat 38°36'27", long 78°14'15", Rappahannock County, at bridge on State Highway 231, 3.5 mi west of Woodville, and 8.0 mi above mouth.	5.54	1950-54, 1961, 1963, 1981	10-21-81 7-27-82	1.8 4.6
01662500	Rush River at Washington, Va.	Lat 38°42'50", long 78°09'05", Rappahannock County, at bridge on old U.S. Highway 211, 0.2 mi east of Washington, and 4.6 mi above mouth.	14.7	1952, 1953-77*, 1978, 1981	10-21-81 7-28-82	1.2 2.9
01663000	Thornton River near Laurel Mills, Va.	Lat 38°37'41", long 78°03'47", Rappahannock County, at bridge on State Highway 729, 2.0 mi southeast of Laurel Mills, and 2.9 mi below Battle Run.	142	1942, 1944-56, 1978, 1981	10-21-81 7-28-82	8.5 31
01665220	Deep Run near Goldvein, Va.	Lat 38°27'07", long 77°37'46", Fauquier and Stafford Counties, at bridge on State Highway 615, 1.5 mi east of Goldvein, and 3.3 mi above mouth.	-	1963, 1981	10-22-81 8- 5-82	1.8 1.2
01665400	Conway River near Stanardsville, Va.	Lat 38°19'58", long 78°23'53", Madison and Greene Counties, at bridge on State Highway 230, 2.2 mi above mouth, and 2.8 mi northeast of Stanardsville.	25.8	1943, 1950-54, 1963, 1978, 1981	10-21-81 7-27-82	2.9 18
01665850	Robinson River near Criglersville, Va.	Lat 38°26'54", long 78°16'44", Madison County, at bridge on State Highway 231, 0.7 mi above Leathers Run, and 1.4 mi southeast of Criglersville.	-	1950-54, 1964, 1981	10-21-81 7-27-82	7.0 41

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01667848	Black Walnut Run at Burr Hill, Va.	Lat 38°20'26", long 77°51'34", Orange County, 10 ft above mouth, at Burr Hill.	11.9	1981	10-22-81 7-27-82	0.42 2.8
01667850	Mine Run at Burr Hill, Va.	Lat 38°20'36", long 77°51'33", Orange County, at bridge on State Highway 692, just downstream from Black Walnut Run, and at Burr Hill.		1943, 1951, 1953, 1963, 1981	10-22-81 7-28-82	.67 4.5
01668100	White Oak Run near Passapatanzy, Va.	Lat 38°15'38", long 77°21'43", Stafford County, at culvert on State Highway 603, 1.0 mi above mouth, and 4.0 mi southwest of Passapatanzy.	8.29	1980-81	11-16-81 8- 2-82	.03 .05
01668200	Gingoteague Run near Port Royal, Va.	Lat 38°12'38", long 77°09'08", King George County, at culvert on State Highway 623, 3.4 mi northeast of Port Royal, and 3.9 mi above mouth.	2.82	1968-69, 1980-81	11-16-81 7-26-82	.36 .03
01668305	Farmers Hall Creek at Rt. 631, near Champlain, Va.	Lat 38°00'53", long 76°57'47", Essex County, at culvert on State Highway 631, 0.35 mi below Rouzie Swamp, and 1.6 mi east of Champlain.	3.65	1980-81	11-16-81 7-26-82	.22 .43
01669100	Totuskey Creek near Emmerton, Va.	Lat 37°54'47", long 76°39'29", Richmond County, at bridge at State Highway 619, just below confluence with Mill Branch, and 1.5 mi northeast of Emmerton.	28.4	1980-81	7-28-82	5.1
01669150	Bellwood Swamp near Lancaster, Va.	Lat 37°46'47", long 76°29'47", Lancaster County, at culvert on State Highway 201, 1.5 mi above mouth, and 1.8 mi northwest of Lancaster.	8.23	1980-81	11-17-81 7-28-82	3.3 2.0
		PIANKATANK RIVER BASIN				
01669400	Timber Branch Swamp tributary at Dragonville, Va.	Lat 37°41'25", long 76°46'25", King and Queen County, at culvert on State Highway 610, 0.15 mi above mouth, and 0.5 mi southeast of Dragonville.	.61	1980-81	10- 1-81 11-13-81 8- 3-82	.03 .14 .24
01669810	Healys Pond tributary near Harmony Village, Va.	Lat 37°34'53", long 76°30'24", Middlesex County, at culvert on State Highway 620, 0.7 mi above Healys Pond, and 1.8 mi southwest of Harmony Village.	.72	1980-81	11-13-81 8- 3-82	.40 .29
		CHESAPEAKE BAY				
01669850	Queens Creek near Blakes, Va.	Lat 37°29'22", long 76°22'55", Mathews County, at culvert on State Highway 626, 1.0 mi southwest of Blakes.	1.56	1980-81	11-17-81 7-28-82	0 0
01669885	North River tributary near North, Va.	Lat 37°28'17", long 76°25'15", Mathews County, at culvert on State Highway 657, 0.1 mi above mouth, and 2.0 mi north of North.	1.04	1980-81	11-17-81 7-28-82	(a) .24
		WARE RIVER BASIN				
01670010	Beaverdam Swamp tributary No. 2 at Ark, Va.	Lat 37°26'35", long 76°34'27", Gloucester County, at culvert on State Highway 606, 2.4 mi north of Ark, and 2.4 mi above mouth.	1.29	1949-55, 1980-81	11-17-81 7-28-82	.36 .13

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		WARE RIVER BASIN--Continued				
01670020	Beaverdam Swamp at Gloucester, Va.	Lat 37°25'34", long 76°31'48", Gloucester County, at bridge on State Highway 616, 0.7 mi northwest of Gloucester, and 3.0 mi above Cow Creek.	22.1	1949-54, 1980-81	11-17-81 7-28-82	2.8 1.0
		YORK RIVER BASIN				
01670120	Mountain Run near Gordonsville, Va.	Lat 38°09'39", long 78°05'36", Orange County, at bridge on State Highway 643, 0.8 mi above confluence with Negro Run, and 4.6 mi east of Gordonsville.	-	1981	10-23-81 7-27-82	.85 2.4
01670200	Pamunkey Creek near Lahore, Va.	Lat 38°09'16", long 77°57'02", Orange County, at bridge on State Highway 651, 1.0 mi above Lake Anna, and 3.3 mi southeast of Lahore.	-	1981	10-23-81 7-27-82	2.2 9.4
01671040	Long Creek near Buckner, Va.	Lat 37°55'38", long 77°47'44", Louisa County, at bridge on State Highway 655, 0.9 mi above mouth, and 2.7 mi southwest of Buckner.	-	1981	10-22-81 7-27-82	.15 .67
01671680	South Anna River near Louisa, Va.	Lat 37°58'50", long 78°02'54", Louisa County, at bridge on State Highway 208, 3.6 mi above Roundabout Creek, and 4.3 mi southwest of Louisa.	-	1942, 1944, 1952-54, 1981	10-22-81 7-26-82	4.3 11
01671950	Deep Creek near Apple Grove, Va.	Lat 37°51'57", long 77°54'53", Louisa County, at culvert on State Highway 640, 0.4 mi above mouth, and 2.0 mi southwest of Apple Grove.	-	1981	10-22-81 7-26-82	.13 .89
01672200	Taylors Creek near Montpelier, Va.	Lat 37°47'49", long 77°43'27", Hanover County, at culvert on State Highway 715, 2.7 mi southwest of Montpelier, and 6.8 mi above mouth.	-	1981	10-22-81 7-26-82	1.7 2.1
01672800	Newfound River near Ashland, Va.	Lat 37°50'35", long 77°32'30", Hanover County, at bridge on State Highway 685, 0.1 mi below Beaver Creek, 1.3 mi west of Hanover Academy, and 5.8 mi northwest of Ashland.	-	1952-54, 1981	10-22-81 8- 5-82	.99 2.2
01673500	Totopotomy Creek near Atlee, Va.	Lat 37°40'09", long 77°22'58", Hanover County, at culvert on U.S. Highway 301, 0.7 mi above Opossum Creek, and 1.6 mi northeast of Atlee.	5.89	1949-77*, 1981	10-23-81 8- 5-82	.19 .65
01673600	Matadequin Creek near Tunstall, Va.	Lat 37°37'02", long 77°08'17", Hanover and New Kent Counties, at bridge on State Highway 606, 1.3 mi above mouth, and 3.2 mi northwest of Tunstall.	29.1	1963, 1980-81	11-18-81 8- 3-82	4.5 25
01673620	Acquinton Creek near King William, Va.	Lat 37°41'04", long 77°02'44", King William County, at culvert on State Highway 629, 1.6 mi west of King William, and 3.9 mi above mouth.	8.93	1980-81	11-13-81 8- 3-82	(a) 3.1
01673700	Catharpin Run near Brokenburg, Va.	Lat 38°13'22", long 77°43'30", Spotsylvania County, at bridge on State Highway 608, 0.1 mi above mouth, and 5.4 mi north of Brokenburg.	-	1981	10-23-81 8- 5-82	0 14
01673900	Poni River tributary No. 1 near Guinea, Va.	Lat 38°09'07", long 77°27'16", Caroline County, at bridge on State Highway 607, 0.7 mi above mouth, and 1.0 mi northwest of Guinea.	6.15	1980-81	11-16-81 7-26-82	.32 (a)

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
YORK RIVER BASIN--Continued						
01673960	Mat River near near Marye, Va.	Lat 38°06'23", long 77°06'07", Spotsylvania County, at bridge on State Highway 647, 1.8 mi above confluence with Ta River, and 2.0 mi northwest of Marye.	-	1943, 1952-54, 1963, 1978, 1981	10-23-81 8- 5-82	0.12 .75
01674172	Polecat Creek near Ladysmith, Va.	Lat 37°58'13", long 77°29'13", Caroline County, at bridge on State Highway 652, 0.5 mi above Stevens Mill Run, and 3.3 mi southeast of Ladysmith.	-	1981	10-23-81 8- 5-82	.13 .24
01674200	Reedy Creek near Dawn, Va.	Lat 37°52'25", long 77°21'35", Caroline County, at culvert on U.S. Highway 301, 4.3 mi above mouth, and 5.8 mi north of Dawn.	16.8	1950, 1956, 1969, 1980-81	11-20-81 7-27-82	3.5 1.5
01674250	Maracossic Creek at Sparta, Va.	Lat 37°59'23", long 77°14'30", Caroline County, at bridge on State Highway 721, 0.6 mi west of Sparta, and 0.9 mi above Jacks Creek.	37.6	1952-54, 1980-81	11-18-81 7-27-82	10 4.4
01674300	Maracossic Creek above Beverly Run, near Gether, Va.	Lat 37°55'15", long 77°11'29", Caroline County, at bridge on State Highway 646, 0.6 mi above Beverly Run, and 0.9 mi east of Gether.	72.4	1963, 1980-81	7-27-82	17
01674350	Beverly Run at Rt. 630, near Alps, Va.	Lat 37°59'29", long 77°09'10", Caroline County, at bridge on State Highway 630, 1.5 mi above King and Queen Swamp, and 1.5 mi east of Alps.	26.5	1952-54, 1980-81	11-18-81 7-27-82	10 12
01674400	Beverly Run at Rt. 721, near Alps, Va.	Lat 37°57'08", long 77°10'48", Caroline and King and Queen Counties, at bridge on Highway 721, 2.5 mi above mouth, and 2.8 mi south of Alps.	46.9	1980-81	11-18-81 7-27-82	14 18
01674600	Herring Creek near Aylett, Va.	Lat 37°50'12", long 77°10'03", King William County, 100 ft above bridge on State Highway 609, 0.4 mi above Fork Bridge Creek, 1.5 mi southeast of Beulahville, and 5.0 mi northwest of Aylett.	28.9	1952-54, 1980-81	7-27-82	4.0
01674805	Dickeys Swamp near Stevensville, Va.	Lat 37°44'03", long 76°57'56", King and Queen County, 60 ft below beaver dam, 100 ft below bridge on State Highway 620, 0.1 mi above Market Swamp, and 2.5 mi northwest of Stevensville.	19.8	1980-81	11-13-81 8- 3-82	2.8 13
01675550	Glebe Swamp near Shackleford, Va.	Lat 37°33'21", long 76°42'38", King and Queen County, at culvert on State Highway 608, 1.4 mi northeast of Shacklefords, and 1.4 mi above mouth.	4.57	1981	11-13-81 8- 3-82	.32 1.1
01677100	France Swamp near Toana, Va.	Lat 37°25'15", long 76°47'06", James City County, at culvert on State Highway 606, 1.1 mi above mouth, and 3.0 mi northeast of Toana.	6.29	1980	10- 1-81 11-19-81 3-18-82 7-29-82 8-27-82 9-21-82	(a) 1.9 5.4 6.9 3.0 <.5
POQUOSON RIVER BASIN						
01677900	Moores Creek near Poquoson, Va.	Lat 37°07'28", long 76°25'15", York County, at culvert on State Highway 171, 0.8 mi above mouth, and 0.8 mi west of Poquoson.	1.03	1980-81	11-19-81 7-29-82	.31 0

< Less than.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		JAMES RIVER BASIN				
02002000	Jackson River at Vanderpool, Va.	Lat 38°22'05", long 79°37'35", Highland County, at bridge on U.S. Highway 220, at Vanderpool, and 0.35 mi above North (East) Fork Jackson River.	-	-	7-16-82	8.7
02015800	Thompson Creek near Bath Alum, Va.	Lat 38°02'38", long 79°41'05", Bath County, at bridge on State Highway 39, 1.3 mi above mouth, and 1.3 mi east of Bath Alum.	-	1963	7-16-82	5.0
02015930	Pads Creek near Longdale Furnace, Va.	Lat 37°51'54", long 79°43'56", Allegheny County, 200 ft below footbridge, 0.2 mi above mouth, and 4.7 mi northwest of Longdale Furnace.	-	-	7-16-82	1.1
02016600	Craig Creek near McDonalds Mill, Va.	Lat 37°21'16", long 80°17'23", Craig County, at private road off State Highway 621, 0.1 mi above Muddy Branch, and 3.9 mi north of McDonalds Mill.	-	-	7-20-82	5.9
02019100	Spreading Springs Branch at Springwood, Va.	Lat 37°32'57", long 79°44'42", Botetourt County, at bridge on State Highway 632, at Springwood, and 0.1 mi above mouth.	-	-	7-20-82	1.1
02020200	Calfpasture River at West Augusta, Va.	Lat 38°16'24", long 79°18'02", Augusta County, at bridge on U.S. Highway 220, 0.15 mi above Barn Lick Branch, and 0.4 mi northeast of West Augusta.	12.8	1942, 1953-54, 1956, 1963	7-15-82	4.9
02024240	South Buffalo Creek near Lexington, Va.	Lat 37°44'14", long 79°34'18", Rockbridge County, at bridge on State Highway 611, 0.2 mi above junction with North Buffalo Creek, and 8.5 mi southwest of Lexington.	-	-	7-20-82	7.6
02024760	Reed Creek near Big Island, Va.	Lat 37°30'10", long 79°24'07", Bedford County, at bridge on State Highway 637, 0.3 mi above Meadow Creek, and 3.0 mi southwest of Big Island.	-	1981	10-19-81 7-27-82	2.6 5.7
02024900	Pedlar River near Buena Vista, Va.	Lat 37°44'48", long 79°16'09", Amherst County, at bridge on U.S. Highway 60, 0.3 mi below Davis Mill Creek, and 4.2 mi east of Buena Vista.	-	1942, 1950-54, 1981	10-20-81 7-27-82	3.0 5.4
02025000	Pedlar River near Pedlar Mills, Va.	Lat 37°32'35", long 79°15'10", Amherst County, at bridge on State Highway 635, 1.1 mi south of Pedlar Mills, and 3.6 mi above mouth.	91.0	1942-56*, 1978, 1981	10-19-81 7-27-82	14 18
02025650	Harris Creek near Monroe, Va.	Lat 37°29'35", long 79°09'10", Amherst County, at bridge on State Highway 675, 1.3 mi west of Monroe, and 1.6 mi above Graham Creek.	-	1981	10-19-81 7-28-82	5.9 18
02025900	Beaver Creek near Babcock, Va.	Lat 37°21'16", long 79°04'27", Campbell County, at bridge on State Highway 660, 2.3 mi east of Babcock, and 3.0 mi above Little Beaver Creek.	-	1981	10-19-81 7-19-82	4.5 14
02026400	South Fork Tye River at Nash, Va.	Lat 37°57'24", long 79°02'47", Nelson County, at private road bridge, 100 ft above confluence with North Fork, and at Nash.	-	1981	10-20-81 7-27-82	3.6 6.4

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

JAMES RIVER BASIN--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
02027600	Buffalo River at Forks of Buffalo, Va.	Lat 37°40'47", long 79°13'20", Amherst County, at bridge on U.S. Highway 60, just below confluence of North and South Forks, and at Forks of Buffalo.	15.9	1942, 1952-54, 1963, 1981	10-19-81 7-27-82	2.7 4.4
02027670	Buffalo River near Amherst, Va.	Lat 37°36'18", long 79°01'35", Amherst County, at bridge on U.S. Highway 29, 0.7 mi northeast of Amherst, and 1.2 mi below Tribulation Creek.	-	1942, 1952-54, 1963, 1981	10-19-81 7-28-82	19 35
02028450	Sycamore Creek near Howardsville, Va.	Lat 37°40'43", long 78°39'55", Buckingham County, at bridge on State Highway 601, 0.2 mi above mouth, and 3.9 mi south of Howardsville.	-	1981	10-19-81 7-28-82	2.3 4.0
02028700	Cove Creek near Covesville, Va.	Lat 37°52'06", long 78°43'32", Albemarle County, at culvert on U.S. Highway 29, 1.7 mi southwest of Covesville, and 3.0 mi above Hickory Creek.	4.0	1942, 1944, 1950-54, 1981	10-20-81 7-26-82	.80 2.7
02029200	North Fork Hardware River at Red Hill, Va.	Lat 37°58'03", long 78°37'04", Albemarle County, at bridge on U.S. Highway 29, 0.1 mi below Middle Branch, and 0.5 mi northwest of Red Hill.	11.0	1942, 1950-54, 1956, 1963, 1981	10-20-81 7-26-82	2.0 6.1
02030150	Slate River at Buckingham, Va.	Lat 37°33'08", long 78°33'53", Buckingham County, at bridge on U.S. Highway 60, just below Horsepen Creek, and 0.3 mi west of Buckingham.	-	1942, 1952-54, 1963, 1981	10-19-81 7-28-82	8.6 23
02030300	Slate River near Dillwyn, Va.	Lat 37°37'08", long 78°29'10", Buckingham County, at bridge on State Highway 20, 0.3 mi below Flat Creek, and 5.2 mi north of Dillwyn.	-	1942, 1952-54, 1963, 1981	10-19-81 7-28-82	24 61
02030850	Stockton Creek near Crozet, Va.	Lat 38°02'37", long 78°41'54", Albemarle County, at bridge on State Highway 635, 1.5 mi south of Crozet, and 2.4 mi above mouth.	-	1953-54, 1963, 1981	10-20-81 7-26-82	3.0 4.0
02031500	North Fork Moormans River near White Hall, Va.	Lat 38°08'25", long 78°45'05", Albemarle County, off State Highway 614, 0.2 mi above Charlottesville Reservoir, and 5.0 mi northwest of White Hall.	11.4	1944-46, 1951-63*, 1969, 1981	10-20-81 7-26-82	1.1 1.8
02033750	Buck Island Creek below Houchins Creek near Simeon, Va.	Lat 37°57'13", long 78°24'15", Albemarle County, 100 ft below bridge on State Highway 729, just below Houchins Creek, and 3.5 mi southeast of Simeon.	-	1981	10-20-81 7-26-82	.77 7.9
02034150	Little Byrd Creek near Fife, Va.	Lat 37°45'50", long 78°05'24", Goochland County, at culvert on State Highway 667, 1.8 mi above mouth, and 1.9 mi northwest of Fife.	-	1981	10-22-81 7-26-82	.33 2.6
02034300	Little Willis River at Curdsville, Va.	Lat 37°24'38", long 78°27'35", Buckingham County, at bridge on U.S. Highway 15, 0.4 mi southwest of Curdsville, and 1.3 mi above Gills Creek.	7.07	1952-54, 1957, 1963, 1981	10-21-81 8- 3-82	.84 1.4
02035075	Maxey Mill Creek near Ballsville, Va.	Lat 37°31'07", long 78°07'31", Cumberland County, at bridge on State Highway 654, 1.0 mi above mouth, and 3.6 mi northwest of Ballsville.	-	1981	10-19-81	1.2

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		JAMES RIVER BASIN--Continued				
02035460	Big Lickinghole Creek at Rt. 613, near Goochland, Va.	Lat 37°43'52", long 77°57'21", Goochland County, at culvert on State Highway 613, 3.3 mi above Little Lickinghole Creek, and 5.3 mi northwest of Goochland.	-	1981	10-22-81 7-26-82	1.4 3.4
02036700	Bernards Creek near Manakin, Va.	Lat 37°33'25", long 77°40'33", Powhatan County, at bridge on State Highway 711, 1.6 mi above mouth, and 3.7 mi southeast of Manakin.	-	1981	10-19-81 7-26-82	0 4.8
02038730	Fourmile Creek near Richmond Heights, Va.	Lat 37°27'16", long 77°19'55", Henrico County, at culvert on Doran Road, 3.9 mi east of Richmond Heights, and 4.9 mi above mouth.	4.01	1980-81	11-20-81 8- 4-82	.60 .79
02038780	Johnson Creek near Rivermont, Va.	Lat 37°19'58", long 77°19'37", Chesterfield County, at culvert on State Highway 746, 1.4 mi northwest of Rivermont, and 2.4 mi above mouth.	6.22	1980-81	11- 2-81 8- 6-82	.18 .09
02039600	Briery Creek near Rice, Va.	Lat 37°16'49", long 78°21'48", Prince Edward County, at bridge on U.S. Highway 460 (Bus), 0.9 mi above mouth, and 4.1 mi west of Rice.	-	1944, 1952-54, 1963, 1981	10-20-81 8- 3-82	4.6 9.0
02039700	Sandy River near Rice, Va.	Lat 37°16'31", long 78°19'17", Prince Edward County, at bridge on U.S. Highway 460, 1.6 mi west of Rice, and 2.0 mi above confluence with Bush River.	-	1944, 1952-54, 1963, 1981	10-20-81 8- 3-82	4.0 7.4
02039800	Angola Creek near Angola, Va.	Lat 37°22'16", long 78°17'15", Cumberland County, at bridge on State Highway 664, 3.2 mi above mouth, and 3.9 mi southwest of Angola.	-	1981	10-20-81	.95
02040500	Flat Creek near Amelia, Va.	Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia.	73.0	1946-48*, 1952-54, 1963, 1981	10-19-81	5.1
02040900	Little Creek near Denaro, Va.	Lat 37°13'32", long 78°01'10", Nottoway County, at bridge on State Highway 611, 2.3 mi southwest of Denaro, and 3.5 mi above mouth.	-	1981	10-20-81	.73
02041150	Winterpock Creek near Winterpock, Va.	Lat 37°21'38", long 77°42'56", Chesterfield County, at culvert on State Highway 664, 1.2 mi north of Winterpock, and 4.1 mi above Surline Branch.	-	1981	10-20-81 8- 4-82	.34 .0032
02041400	Whipponock Creek near Church Road, Va.	Lat 37°11'45", long 77°39'23", Dinwiddie County, at culvert on State Highway 627, 1.3 mi northwest of Church Road.	-	1981	10-21-82 8- 4-82	.04 .45
02042050	Franks Branch at Rt. 626, near Colonial Heights, Va.	Lat 37°16'42", long 77°28'35", Chesterfield County, at bridge on State Highway 626, 1.0 mi above mouth, and 2.5 mi west of Colonial Heights.	-	1981	10-21-81 8- 4-82	.16 4.3
02042140	Powell Creek at Garysville, Va.	Lat 37°14'54", long 77°09'09", Prince George County, at bridge on State Highway 10, 4.7 mi above mouth, and at Garysville.	14.6	1980-81	11- 2-81 8- 6-82	1.8 3.4
02042160	West Run at Barnetts, Va.	Lat 37°21'30", long 77°09'56", Charles City County, at culvert on State Highway 625, 1.0 mi above Harrison Lake, and 1.0 mi southwest of Barnetts.	20.3	1968, 1980-81	11-20-81 8- 4-82	3.1 2.3

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		JAMES RIVER BASIN--Continued				
02042200	Glebe Creek tributary near Charles City, Va.	Lat 37°22'05", long 77°04'15", Charles City County, at culvert on State Highway 155, 0.7 mi above mouth, and 1.6 mi north of Charles City.	0.7	1948, 1953-55, 1980-81,	11-19-81 8- 4-82	0 0
02042210	Courthouse Creek at Charles City, Va.	Lat 37°20'37", long 77°04'14", Charles City County, at bridge on State Highway 5, 0.8 mi above Parrish Hill Creek, and at Charles City.	9.79	1968, 1980-81	11-19-81 8- 4-82	2.0 3.2
02042450	White Oak Swamp near White Oak Swamp, Va.	Lat 37°29'03", long 77°16'05", Henrico County, at culvert on Poplar Springs Road, 0.1 mi below White Oak Swamp Creek, and 2.0 mi southeast of White Oak Swamp.	8.26	1980-81	8- 4-82	2.0
02042600	Rumley Marsh near Providence Forge, Va.	Lat 37°28'32", long 77°02'49", New Kent County, at bridge on forest road, 2.3 mi north of Providence Forge, and 2.5 mi above U.S. Highway 60.	11.9	1981	10- 1-81 11-20-81 8- 4-82	2.8 5.5 3.7
02042700	Collins Run near Providence Forge, Va.	Lat 37°23'59", long 77°02'54", Charles City County, at culvert on State Highway 155, 2.5 mi above mouth, and 2.9 mi south of Providence Forge.	2.84	1948, 1953-56, 1967, 1980-81	11-19-81 8- 4-82	.64 .66
02042782	Powhattan Creek at Five Forks, Va.	Lat 37°14'57", long 76°46'23", James City County, at bridge on State Highway 5, 2.7 mi north of Jamestown, and 4.3 mi above mouth on Sandy Bay.	19.7	1980-81	7-29-82	1.3
02042784	Grays Creek near Surry, Va.	Lat 37°10'06", long 76°51'25", Surry County, at bridge on State Highway 618, 2.0 mi northwest of Surry, and 5.4 mi above mouth.	8.09	1980-81	9- 7-82	2.7
02042787	Skiffes Creek near Lee Hall, Va.	Lat 37°12'48", long 76°36'50", James City County, at culvert on Plantation Road, 0.9 mi above Skiffes Creek Reservoir, and 3.2 mi northwest of Lee Hall.	1.32	1980-81	11-19-81 3-18-82 7-29-82 8-26-82 9-20-82	.11 1.6 .37 .40 .17
02042790	Beaverdam Creek near Yorktown, Va.	Lat 37°12'09", long 76°31'16", York County, at bridge on Yorktown Tour Drive, 0.5 mi below confluence of Great Run and Baptist Run, and 2.2 mi south of Yorktown.	5.46	1980-81	11-19-81 7-29-82	.52 1.9
02042794	Cypress Creek near Benns Church, Va.	Lat 36°55'22", long 76°36'15", Isle of Wight County, at bridge on State Highway 620, 1.5 mi southwest of Benns Church, and 5.3 mi above mouth.	-	1980-81	11- 5-81 8- 5-82	1.6 1.8
02042830	Shingle Creek at Suffolk, Va.	Lat 36°43'16", long 76°34'02", Suffolk City, at culvert on White Marsh Road, 0.4 mi south of Suffolk, and 3.3 mi above mouth.	-	1979-80	11- 5-81 8- 9-82	.53 .82
02042890	Drum Point Creek at Boone, Va.	Lat 36°50'44", long 76°26'03", Chesapeake City, at culvert on Pughsville Road, 0.3 mi north of Boone, and 2.7 mi above mouth.	.61	1980-81	11- 5-81 8- 5-82	(a) (a)
		CHESAPEAKE BAY				
02042950	Great Neck Creek tributary at Oceana, Va.	Lat 36°50'03", long 76°00'47", Virginia Beach City, at culvert on Oceana Blvd., 0.45 mi above mouth, and 2.0 mi east of London Bridge.	.90	1980-81	11- 5-81 8- 5-82	.32 .64

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		CURRITUCK SOUND				
02043000	Beggars Bridge Creek near Pleasant Ridge, Va.	Lat 36°40'57", long 76°00'37", Virginia Beach City, at culvert on Dawley Road, 1.0 mi southeast of Pleasant Ridge, and 2.2 mi above mouth.	0.76	1980-81	11- 5-81 8- 5-82	0 .10
02043100	Albemarle and Chesapeake Canal tributary near Great Bridge, Va.	Lat 36°41'07", long 76°13'17", Virginia Beach City, at culvert on Etheridge Road, 1.7 mi southeast of Great Bridge, and 2.4 mi above mouth.	3.80	1980-81	11- 5-81 8- 5-82	.52 4.0
		CHOWAN RIVER BASIN				
02044300	Little Nottoway River near Blackstone, Va.	Lat 37°02'25", long 78°02'07", Nottoway County, at bridge on State Highway 40, 2.2 mi above mouth, and 2.4 mi southwest of Blackstone.	-	1942, 1952-54, 1981	10-21-81	5.4
02045800	White Oak Creek near Hebron, Va.	Lat 37°07'40", long 77°48'54", Dinwiddie County, at bridge on State Highway 620, 1.2 mi southwest of Hebron.	-	1981	10-21-81	.39
02046230	Sappony Creek at Rt. 681, near Stony Creek, Va.	Lat 36°56'36", long 77°27'08", Sussex County, at bridge on State Highway 681, 1.5 mi above mouth, and 2.5 mi west of Stony Creek.	-	1981	10-21-81	(a)
02046300	Hatcher Run near Reams, Va.	Lat 37°07'23", long 77°28'45", Dinwiddie County, at bridge on State Highway 613, 2.1 mi above Arthur Swamp, and 4.3 mi northwest of Reams.	-	1981	10-22-81 7-19-82	.08 4.7
02046370	Rowanty Creek near Stony Creek, Va.	Lat 36°58'57", long 77°22'53", Sussex County, at bridge on State Highway 602, 1.7 mi below Bolling Swamp, and 2.2 mi northeast of Stony Creek.	-	1981	10-22-81 7-19-82	(a) 30
02046480	Hunting Quarter Swamp near Sussex, Va.	Lat 36°53'25", long 77°29'54", Sussex County, at culvert on State Highway 735, 1.9 mi south of Sussex.	9.25	1980-81	11- 3-81 4-16-82 9- 9-82	(a) 7.6 .90
02046500	Anderson Branch at Sussex, Va.	Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex, and 1.7 mi above mouth.	5.35	1949-56*, 1969, 1980-81	11- 3-81 9- 9-82	0 0
02046700	Raccoon Creek near Sebrell, Va.	Lat 36°48'11", long 77°12'28", Southampton County, at bridge on State Highway 608, 3.2 mi above mouth, and 4.6 mi northwest of Sebrell.	65.0	1942, 1952-54, 1978, 1980-81	4-16-82 9- 9-82	35 11
02046720	Tryall Creek near Smoky Ordinary, Va.	Lat 36°47'03", long 77°39'55", Brunswick County, at bridge on State Highway 607, 1.6 mi above confluence with Cooks Branch, and 5.0 mi southeast of Smoky Ordinary.	-	1981	10-22-81 7-22-82	0 .08
02046750	Three Creek at Rt. 616, near Emporia, Va.	Lat 36°43'25", long 77°31'13", Greensville County, at bridge on State Highway 616, 1.5 mi below Maelins Creek, and 1.6 mi northeast of Emporia.	67.2	1981	10-22-81 7-19-82	2.5 12
02046830	Applewhite Swamp near Drewryville, Va.	Lat 36°43'36", long 77°21'03", Southampton County, at culvert on State Highway 612, 2.6 mi northwest of Drewryville.	5.96	1980-81	11- 3-81 9- 9-82	.40 .03

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

CHOWAN RIVER BASIN--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
02047050	Assamoosick Swamp near Homeville, Va.	Lat 36°58'30", long 77°09'11", Sussex County, at bridge on State Highway 40, 2.4 mi northeast of Homeville.	22.0	1980-81	11- 3-81 9- 9-82	b2.1 .27
02047100	Assamoosick Swamp tributary near Sebrell, Va.	Lat 36°46'22", long 77°05'57", Southampton County, at bridge on State Highway 35, 0.7 mi above Indian Branch, and 1.5 mi southeast of Sebrell.	86.4	1942-43, 1952-54, 1980-81	11- 3-81 9-10-82	5.8 0
02047300	Nottoway Swamp near Story, Va.	Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 1.6 mi northeast of Story.	12.2	1980-81	11- 4-81 9- 8-82	.78 .05
02047360	Mill Creek near Sunbeam, Va.	Lat 36°34'12", long 77°02'19", Southampton County, at bridge on State Highway 684, 1.2 mi southwest of Sunbeam, and 1.5 mi above Windbourne Millpond.	23.7	1980-81	11- 4-81 9- 8-82	0 0
02047400	Blackwater Swamp near Disputanta, Va.	Lat 37°08'02", long 77°12'30", Prince George County, at bridge on State Highway 625, 1.0 mi northeast of Disputanta.	75.6	1942, 1952-53, 1980-81	11- 2-81 4-15-82 8- 6-82	0 2.4 17
02047420	Warwick Swamp near Disputanta, Va.	Lat 37°05'34", long 77°09'08", Sussex County, at bridge on State Highway 613, 0.9 mi above mouth, and 4.5 mi southeast of Disputanta.	38.2	1980-81	4-15-82 9- 7-82	4.9 1.9
02047440	Otterdam Swamp near Waverly, Va.	Lat 37°04'57", long 77°03'19", Surry County, at culvert on State Highway 40, 1.2 mi above mouth, and 3.2 mi northeast of Waverly.	22.4	1980-81	4-15-82 9- 7-82	7.2 6.1
02047460	Pigeonroost Swamp near Elberon, Va.	Lat 37°06'35", long 76°53'42", Surry County, at culvert on State Highway 618, 2.5 mi north of Elberon.	5.98	1980-81	11- 2-81 9- 7-82	.51 .22
02047480	Cypress Swamp near Dendron, Va.	Lat 37°03'18", long 76°55'15", Surry County, at bridge on State Highway 31, 0.2 mi northeast of Dendron, and 2.8 mi above mouth.	54.4	1980-81	11- 2-81 4-15-82 9- 7-82	(a) 75 23
02047520	Rattlesnake Swamp at Raynor, Va.	Lat 36°57'30", long 76°46'25", Isle of Wight County, at bridge on State Highway 625, 0.9 mi above Mill Swamp, and 0.9 mi northeast of Raynor.	40.3	1980-81	8- 9-82	40
02048460	Round Hill Swamp near Berlin, Va.	Lat 36°51'02", long 76°56'21", Southampton County, at bridge on State Highway 614, 1.5 mi above mouth, and 2.2 mi east of Berlin.	25.6	1980-81	9- 8-82	0
02048500	Seacock Swamp at Unity, Va.	Lat 36°49'15", long 76°51'56", Southampton County, at bridge on State Highway 635, 0.7 mi northeast of Unity, and 1.8 mi above mouth.	102	1942-49*, 1952, 1976, 1978, 1980-81	6- 3-82 9- 8-82	72 (a)
02049700	Cypress Swamp near Burdette, Va.	Lat 36°44'29", long 76°56'18", Southampton County, at culvert on State Highway 611, 1.8 mi above mouth, and 3.1 mi southwest of Burdette.	8.55	1950-56, 1968, 1980-81	11- 4-81 9- 9-82	.81 .14
02050115	Chapel Swamp near Somerton, Va.	Lat 36°34'34", long 76°48'28", Suffolk City, at bridge on State Highway 759, 0.5 mi above mouth, and 3.2 mi west of Somerton.	17.9	1980-81	9- 8-82	(a)

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.
b Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		CHOWAN RIVER BASIN--Continued				
02050130	Beaverdam Creek near Cleopus, Va.	Lat 36°33'10", long 76°50'30", Suffolk City, at bridge on State Highway 668, 0.5 mi above mouth, and 2.8 mi south of Cleopus.	8.77	1965-68, 1970, 1980-81	11- 4-81 9- 8-82	0 (a)
02050150	Quaker Swamp near Lummis, Va.	Lat 36°41'42", long 76°43'35", Suffolk City, at culvert on U.S. Highway 58, 1.4 mi west of Lummis.	4.02	1980-81	8- 9-82	(a)
02051100	South Meherrin River near Chase City, Va.	Lat 36°51'34", long 78°25'22", Lunenburg and Mecklenburg Counties, at bridge on State Highway 49, 4.0 mi northeast of Chase City.	-	1944, 1952-54, 1981	10-20-81 7-21-82	.86 8.8
02051175	Meherrin River near Northview, Va.	Lat 36°48'03", long 78°10'04", Mecklenburg County, at bridge on State Highway 636, 1.2 mi above Crooked Creek, and 4.5 mi northeast of Northview.	-	-	10-21-81 7-21-82	22 170
02051200	Flat Rock Creek near Kenbridge, Va.	Lat 36°53'58", long 78°07'22", Lunenburg County, at bridge on State Highway 647, 2.5 mi southwest of Bishops Corner, and 4.3 mi south of Kenbridge.	-	1952-54, 1981	10-21-81 7-22-82	2.0 15
02051300	Evans Creek near Brodnax, Va.	Lat 36°44'07", long 77°57'34", Brunswick County, at bridge on State Highway 623, 0.9 mi above mouth, and 4.0 mi northeast of Brodnax.	-	1981	10-21-81 7-22-82	.42 4.0
02052100	Rattlesnake Creek near Ankum, Va.	Lat 36°36'48", long 77°52'25", Brunswick County, 100 ft downstream from State Highway 46, 0.4 mi above Houses Creek, and 0.8 mi northeast of Ankum.	-	1981	10-22-81 7-19-82	.04 1.0
02053030	Mill Swamp near Claresville, Va.	Lat 36°36'32", long 77°29'10", Greensville County, at bridge on State Highway 660, 2.2 mi southwest of Claresville, and 3.8 mi above Taylors Millpond.	-	1981	10-22-81 7-19-82	0 (a)
02053100	Tarrara Creek at Boykins, Va.	Lat 36°35'20", long 77°12'03", Southampton County, at bridge on State Highway 35, 3.7 mi above mouth, and at Boykins.	57.5	1980-81	9-10-82	.09
		ROANOKE RIVER BASIN				
02054120	North Fork Roanoke River below Lusters Gate, Va.	Lat 37°13'18", long 80°21'56", Montgomery County, at private road bridge off State Highway 723, 1.4 mi south of Lusters Gate, and 1.4 mi below Indian Run.	-	1969	7-21-82	13
02056700	Beaverdam Creek near Hardy, Va.	Lat 37°13'28", long 79°45'23", Bedford County, at culvert on State Highway 757, 1.1 mi below West Fork, and 3.0 mi east of Hardy.	-	1981	10-22-81 7-22-82	2.2 5.9
02056850	Maggodee Creek near Boones Mill, Va.	Lat 37°07'57", long 79°58'20", Franklin County, at bridge on private road, 0.5 mi south of Murray Gap, and 1.6 mi northwest of Boones Mill.	-	1981	10-22-81 7-22-82	.66 4.9
02057050	Gills Creek at Rt. 122, near Burnt Chimney, Va.	Lat 37°07'31", long 79°46'58", Franklin County, at bridge on State Highway 122, 2.4 mi northeast of Burnt Chimney.	-	1952-54, 1981	10-22-81 7-22-82	2.2 5.8
02057600	Pigg River at Rt. 40, near Rocky Mount, Va.	Lat 36°58'34", long 79°55'32", Franklin County, at bridge on State Highway 40, 1.0 mi west of Rocky Mount, and 1.8 mi above Story Creek.	-	1976, 1981	10-22-81 7-22-82	10 25

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02057750	Little Chestnut Creek near Sydnorsville, Va.	Lat 36°54'07", long 79°50'55", Franklin County, at bridge on State Highway 724, 1.3 mi northeast of Sydnorsville, just below confluence of North and South Forks, and 1.6 mi above mouth.	-	1981	10-22-81 7-20-82	2.0 3.9
02058100	Turkeycock Creek at Sago, Va.	Lat 36°52'53", long 79°37'52", Pittsylvania County, at bridge on State Highway 969, 0.8 mi southeast of Sago, and 3.3 mi above mouth.	-	1953-54, 1981	10-20-81 7-20-82	7.6 8.0
02059400	North Fork Goose Creek near Montvale, Va.	Lat 37°22'14", long 79°41'55", Bedford County, at bridge on U.S. Highway 460, 0.1 mi above junction with South Fork Goose Creek, and 1.7 mi southeast of Montvale.	-	1952-54	7-22-82	9.4
02059560	Shockoe Creek near Irving, Va.	Lat 37°18'46", long 79°40'34", Bedford County, at culvert on State Highway 755, 1.0 mi above mouth, and 3.1 mi south of Irving.	-	1981	10-23-81 7-23-82	.19 .44
02060400	Sycamore Creek at Sycamore, Va.	Lat 37°01'25", long 79°21'24", Pittsylvania County, at culvert on State Highway 643, at Sycamore, and 4.0 mi above Little Sycamore Creek.	-	1981	10-19-81 7-19-82	.91 1.7
02061000	Big Otter River near Bedford, Va.	Lat 37°21'50", long 79°25'10", Bedford County, at bridge on U.S. Highway 221, 4.0 mi northeast of Bedford, and 8.9 mi above Little Otter River.	116	1942, 1944-60‡, 1981	7-23-82	52
02061200	Little Otter River at Rt. 122, near Bedford, Va.	Lat 37°21'41", long 79°30'03", Bedford County, at bridge on State Highway 122, 0.4 mi north of Bedford.	-	1942, 1952-54, 1978, 1981	7-23-82	6.6
02062300	Seneca Creek near Long Island, Va.	Lat 37°06'23", long 79°07'22", Campbell County, at bridge on State Highway 633, at Marysville, 1.5 mi above mouth, and 2.6 mi northwest of Long Island.	-	1981	10-19-81 7-19-82	6.4 14
02063400	Reddy Creek near Spring Mills, Va.	Lat 37°16'54", long 78°54'14", Appomattox County, at bridge on State Highway 679, 100 ft above mouth, and 2.3 mi north of Spring Mills.	-	1951-54, 1977, 1981	7-19-82	4.4
02065220	Catawba Creek at Clarkton, Va.	Lat 36°58'30", long 78°53'45", Halifax County, at bridge on State Highway 626, 0.2 mi above mouth, and 0.8 mi southeast of Clarkton.	-	1981	10-19-81 8- 4-82	9.9 13
02065400	Big Cub Creek near Madisonville, Va.	Lat 37°12'13", long 78°44'05", Charlotte County, at bridge on State Highway 701, 0.1 mi below Little Cub Creek, and 2.7 mi northwest of Madisonville.	-	1981	10-19-81 7-20-82	7.0 18
02066450	Roanoke Creek near Charlotte Court House, Va.	Lat 37°03'27", long 78°35'03", Charlotte County, at bridge on State Highway 40, 0.1 mi below Dunnavant Creek, and 2.0 mi east of Charlotte Court House.	-	1953-54, 1981	10-19-81 7-20-82	b>.1 11
02066500	Roanoke Creek at Saxe, Va.	Lat 36°55'49", long 78°39'56", Charlotte County, at bridge on State Highway 612, at Saxe, and 5.0 mi above mouth.	135	1942-43, 1946-72‡, 1981	10-20-81 7-21-82	13 20

‡ Operated as a continuous-record gaging station.
> Greater than.
b Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02067100	Difficult Creek near Scottsburg, Va.	Lat 36°47'46", long 78°47'10", Halifax County, at bridge on U.S. Highway 360, 2.5 mi above Piney Creek, and 2.6 mi north of Scottsburg.	-	1981	10-20-81 7-21-82	6.2 14
02069550	North Fork South Mayo River at Stuart, Va.	Lat 36°39'03", long 80°17'08", Patrick County, at bridge on U.S. Highway 58, 0.5 mi northwest of Stuart, and 1.5 mi above mouth.	-	1953-54, 1981	10-21-81 7-21-82	3.1 11
02069800	Grassy Branch near Sanville, Va.	Lat 36°42'03", long 80°05'48", Patrick County, at culvert on State Highway 721, 0.3 mi above mouth, and 2.5 mi southwest of Sanville.	-	1981	10-21-81 7-21-82	.98 2.1
02071600	Smith River near Charity, Va.	Lat 36°48'18", long 80°12'04", Patrick County, at bridge on State Highway 704, 0.9 mi above Joint Crack Creek, and 1.4 mi southeast of Charity.	-	1981	10-21-81 7-21-82	27 76
02071800	Nicholas Creek near Ferrum, Va.	Lat 36°52'11", long 80°03'10", Franklin County, at bridge on State Highway 605, 3.1 mi above Philpott Reservoir, and 4.1 mi southwest of Ferrum.	12.2	1949, 1951, 1953, 1955-64, 1969, 1971, 1981	10-21-81 7-22-82	1.9 6.1
02072600	Reed Creek near Collinsville, Va.	Lat 36°45'17", long 79°54'48", Henry County, at bridge on State Highway 669, 1.0 mi north of Collinsville, and 2.9 mi above mouth.	-	1981	10-22-81 7-20-82	2.1 3.1
02073500	Leatherwood Creek near Martinsville, Va.	Lat 36°38'10", long 79°47'30", Henry County, at bridge on State Highway 650, 1.7 mi above mouth, and 2.5 mi southeast of Martinsville.	68	1926-34*, 1953-54, 1981	10-20-81 7-21-82	10 19
02074450	Sandy River near Swansonville, Va.	Lat 36°44'23", long 79°36'54", Pittsylvania County, at bridge on State Highway 612, 0.1 mi below West Fork, and 2.0 mi west of Swansonville.	-	1981	10-20-81 7-19-82	4.7 6.9
02075020	Fall Creek near Danville, Va.	Lat 36°40'42", long 79°24'13", Pittsylvania County, at bridge on State Highway 744, 2.4 mi north of Danville, and 2.8 mi above Edward Creek.	-	1981	10-20-81 7-20-82	.27 .82
02075275	Sandy Creek near Ringgold, Va.	Lat 36°34'50", long 79°13'31", Pittsylvania County, at bridge on U.S. Highway 58, 1.2 mi above mouth, and 4.6 mi southeast of Ringgold.	-	1942, 1981	10-19-81 7-20-82	4.0 4.1
02075600	Birch Creek near Birch, Va.	Lat 36°42'12", long 79°13'03", Pittsylvania County, at bridge on State Highway 729, 1.2 mi below Gunther Branch, and 3.0 mi southwest of Birch.	-	1981	10-19-81 7-20-82	4.5 9.0
02075600	Lawsons Creek near Turbeville, Va.	Lat 36°36'39", long 79°01'28", Halifax County, at culvert on State Highway 658, 0.7 mi below Long Branch, and 1.2 mi southeast of Turbeville.	8.7	1950-64, 1968, 1970-71, 1981	10-19-81 7-20-82	.62 2.8
02076300	Banister River at U.S. Highway 29, near Chatham, Va.	Lat 36°46'41", long 79°23'33", Pittsylvania County, at bridge on U.S. Highway 29, 1.6 mi below White Oak Creek, and 1.8 mi south of Chatham.	-	1942, 1953-54, 1981	10-19-81	13
02076650	Banister River near Mount Airy, Va.	Lat 36°54'39", long 79°11'00", Pittsylvania County, at bridge on State Highway 640, 2.2 mi south of Mount Airy.	-	1942, 1953-54, 1981	10-19-81 8- 3-82	51 98

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		ROANOKE RIVER BASIN--Continued				
02076770	Sandy Creek at Meadville, Va.	Lat 36°49'32", long 79°01'39", Halifax County, at bridge on State Highway 832, 0.2 mi above mouth, and 0.7 mi south of Meadville.	-	1953-54, 1981	10-20-81 8- 4-82	20 49
02078300	Aarons Creek near Nelson, Va.	Lat 36°35'12", long 78°43'00", Halifax and Mecklenburg Counties, at bridge on State Highway 604, 1.7 mi northwest of Nelson.	-	1981	10-20-81 7-21-82	.04 5.3
02078400	Bluestone Creek at Rt. 699, near Laconia, Va.	Lat 36°43'48", long 78°36'58", Mecklenburg County, at bridge on State Highway 699, 1.2 mi east of Laconia, and 3.4 mi south of Red Oak.	-	1981	10-20-81 7-21-82	.80 12
02079660	Jolly Hollow Branch at Boydton, Va.	Lat 36°40'38", long 78°23'13", Mecklenburg County, at bridge on State Highway 92, 0.3 mi north of Boydton, and 0.4 mi above Whetstone Branch.	3.60	1944-54, 1960, 1981	10-21-81 7-21-82	.04 .74
02079665	Cox Creek at Baskerville, Va.	Lat 36°40'58", long 78°16'15", Mecklenburg County, at bridge on State Highway 669, 0.5 mi southeast of Baskerville.	-	1981	10-21-81 7-22-82	(a) 3.7
02079740	Great Creek near Marengo, Va.	Lat 36°36'22", long 78°05'05", Mecklenburg County, at bridge on State Highway 620, 0.7 mi above Hagood Creek, and 2.8 mi southeast of Marengo.	-	1981	10-21-81 7-22-82	.17 2.6
		YADKIN RIVER BASIN				
02113550	Ararat River near Ararat, Va.	Lat 36°34'07", long 80°33'03", Patrick County, at bridge on State Highway 749, 1.6 mi upstream from VA-NC stateline, and 3.0 mi southwest of Ararat.	-	1981	7- 4-82	24
		KANAWHA RIVER BASIN				
03163500	Elk Creek at Mt. Carmel Church, near Galax, Va.	Lat 35°41'53", long 80°03'26", Grayson County, along State Highway 650, at Mt. Carmel Church, 2.9 mi above mouth, and 10 mi northwest of Galax.	-	-	7-22-82	32
03165350	Brush Creek near Ivanhoe, Va.	Lat 36°45'59", long 80°59'05", Carroll County, at bridge on State Highway 94, 3.2 mi above mouth, and 5.0 mi southwest of Ivanhoe.	-	-	7-22-82	6.3
03167200	Laurel Fork near Laurel Fork, Va.	Lat 36°44'34", long 80°31'49", Carroll County, at bridge on State Highway 638, 1.8 mi northwest of Laurel Fork, and 5.8 mi above mouth.	-	-	7-21-82	21
03167700	Beaverdam Creek at Hillsville, Va.	Lat 36°45'45", long 80°43'42", Carroll County, at culvert on U.S. Highway 58, at Hillsville, and 2.9 mi above mouth.	4.13	1952-55	7-21-82	4.0
03168750	Thorne Springs Branch near Dublin, Va.	Lat 37°05'30", long 80°44'34", Pulaski County, at culvert on U.S. Highway 11, 2.8 mi west of Dublin, and 3.7 mi above mouth.	4.77	1957-70*, 1978	7-22-82	.41
03169150	Pine Creek near Floyd, Va.	Lat 37°57'03", long 80°17'03", Floyd County, at bridge on State Highway 682, 0.6 mi above mouth, and 2.8 mi northeast of Floyd.	-	-	7-21-82	7.6

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		KANAWHA RIVER BASIN--Continued				
03169370	Brush Creek near Riner, Va.	Lat 37°01'57", long 80°23'49", Montgomery County, at bridge on State Highway 616, 2.2 mi above mouth, and 3.3 mi southeast of Riner.	-	-	7-21-82	7.0
03171400	Neck Creek near Belspring, Va.	Lat 37°11'03", long 80°37'24", Pulaski County, at culvert on State Highway 617, 0.9 mi southwest of Belspring, and 1.5 mi above mouth.	-	-	7-22-82	3.6
03171550	Sinking Creek near Newport, Va.	Lat 37°18'40", long 80°30'55", Giles County, at bridge on State Highway 700, 1.6 mi northwest of Newport, and 6.9 mi above mouth.	-	1942, 1952-55	7-20-82	41

Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the State. Data for miscellaneous sites furnished by the Virginia State Water Control Board are noted by an "a/". Data collected as part of a special study on the effects of acid rain in the Shenandoah National Park are noted by a "b/".

Discharge measurements made at special study and miscellaneous sites during water year 1982

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		NASSAWADOX CREEK BASIN				
Nassawadox Creek a/	Chesapeake Bay	Lat 37°31'31", long 75°52'37", Northampton County, at culvert on State Highway 606, 2.7 mi upstream from Kelly Cove, and 3.5 mi north of Nassawadox.	c4.2	1968-81	11-11-81 2-24-82 5-27-82 8-25-82	0.96 6.85 1.78 3.05
		POTOMAC RIVER BASIN				
Unnamed tributary	Middle River	Lat 38°09'57", long 79°13'52", Augusta County, at culvert on State Highway 705, 1.2 mi above mouth, and 1.3 mi northwest of Swoope.	.43	-	7-15-82	0
Sixteenmile Branch	Jennings Branch	Lat 38°16'48", long 78°15'58", Augusta County, at culvert on U.S. Highway 250, 300 ft above mouth, and 2.0 mi northeast of West Augusta.	.44	-	7-15-82	0
Spruce Lick Branch	Jennings Branch	Lat 38°16'57", long 78°15'20", Augusta County, at culvert on U.S. Highway 250, 0.1 mi above mouth, and 2.5 mi northeast of West Augusta.	1.01	-	7-15-82	0
South River a/	South Fork Shenandoah River	Lat 38°03'42", long 78°53'08", Waynesboro City, 0.6 mi downstream from Wayne Avenue bridge, 0.6 mi upstream from Main Street bridge.	-	-	9- 2-82	*47.1
South River a/	South Fork Shenandoah River	Lat 38°04'30", long 78°53'05", Waynesboro City, 0.4 mi upstream from Bridge Street bridge, 0.5 mi downstream from Main Street bridge.	-	1979	9- 2-82	*60.5
South River a/	South Fork Shenandoah River	Lat 38°04'45", long 78°52'38", Waynesboro City, at Bridge Street bridge, 0.9 mi downstream from Main Street bridge.	-	1979	9- 2-82	*59.8
South River a/	South Fork Shenandoah River	Lat 38°06'15", long 78°51'58", Augusta County, at Dooms, 0.3 mi upstream from bridge on State Highway 611, and 0.4 mi southwest of intersection with U.S. Highway 340.	-	-	9- 2-82	*67.7
01626900 Sawmill Run b/	South River	Lat 38°05'46", long 78°48'38", Augusta County, at bridge on on State Highway 611, 2.7 mi southeast of Dooms, and 3.3 mi above mouth.	3.62	1981	1-28-82 3-18-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82	2.42 6.90 1.42 1.34 .12 .43 .066
South River a/	South Fork Shenandoah River	Lat 38°08'22", long 78°51'28", Augusta County, 1.3 mi southwest of Crimora, 2.2 mi upstream from bridge on State Highway 612.	-	-	9- 2-82	*71.4
01627000 Mine Branch b/	South River	Lat 38°08'36", long 78°48'54", Augusta County, at culvert on State Highway 612, 1.6 mi southeast of Crimora, and 2.5 mi above mouth.	1.26	1981	1-27-82 3-16-82 5-20-82 6-24-82	.30 1.18 .17 .34

* Base flow.
a Furnished by Virginia State Water Control Board.
b Effects of acid rain in the Shenandoah National Park.
c Approximately.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
South River a/	South Fork Shenandoah River	Lat 38°09'22", long 78°51'15", Augusta County, at Crimora, 200 ft upstream from bridge on State Highway 612, and 0.7 mi west of intersection with U.S. Highway 340.	-	1979	9- 1-82	*75.8
01627100 Meadow Run b/	South River	Lat 38°09'29", long 78°48'38", Augusta County, at side of Riprap Trail, 500 ft above Shenandoah National Park boundary, and 1.7 mi east of Crimora.	3.45	1981	1-27-82 3-16-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82	1.56 8.33 1.71 2.33 .53 1.1 .27
01627400 Paine Run b/	South River	Lat 38°11'55", long 78°47'38", Augusta County, 100 ft below ford on State Highway 614, 2.5 mi southeast of Harriston, and 2.7 mi above mouth.	4.92	1981	1-27-82 3-16-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82	2.56 11.1 2.09 3.00 .72 .88 .26
01628050 Madison Run b/	South Fork Shenandoah River	Lat 38°15'05", long 78°44'50", Rockingham County, 250 ft south of Madison Run Road, 3.9 mi east of Grottoes, and 5.2 mi above mouth.	2.00	1981	1-27-82 3-16-82 5-20-82 6-24-82	1.83 5.09 .70 .74
01628080 Madison Run b/	South Fork Shenandoah River	Lat 38°15'24", long 78°46'06", Rockingham County, at Shenandoah National Park boundary, 2.5 mi east of Grottoes, and 3.8 mi above mouth.	5.78	1968, 1981	1-27-82 3-16-82 5-20-82 6-24-82	3.96 13.3 1.91 2.45
01628300 Lower Lewis Run b/	South Fork Shenandoah River	Lat 38°18'06", long 78°44'02", Rockingham County, at ford, 2.1 mi above mouth, and 2.2 mi east of Lynnwood.	1.19	1981	3-16-82 5-20-82 6-24-82	.66 .22 .30
01628320 Unnamed tributary b/	Lower Lewis Run	Lat 38°18'03", long 78°44'20", Rockingham County, 100 ft above culvert on fire road, 2.0 mi east of Lynnwood.	.18	-	3-16-82 5-20-82 6-10-82 6-24-82	.24 .038 .031 .32
01628350 Upper Lewis Run b/	Lower Lewis Run	Lat 38°17'35", long 78°44'55", Rockingham County, at ford, 1.0 mi above mouth, and 1.7 mi southeast of Lynnwood.	1.58	1981	5-20-82 6-24-82	.35 .52
01628530 Hangman Run b/	South Fork Shenandoah River	Lat 38°18'42", long 78°43'02", Rockingham County, at culvert on fire road, 0.7 mi above mouth, and 2.5 mi southwest of Rocky Bar.	.44	-	6-10-82 6-25-82	.19 .072
01628700 Twomile Run b/	South Fork Shenandoah River	Lat 38°20'04", long 78°40'20", Rockingham County, 200 ft downstream from Shenandoah National Park boundary, 2.1 mi above mouth, and 4.1 mi southeast of McGaheysville.	2.17	1981	1-27-82 3-16-82 5-21-82 6-22-82 7-22-82 8-23-82 9-21-82	.36 4.67 .92 1.59 .21 .11 0
01628750 Walls Run b/	Gap Run	Lat 38°21'23", long 78°39'47", Rockingham County, 1.0 mi above confluence with Gap Run, 2.2 mi northeast of Rocky Bar.	.60	-	6-10-82 6-22-82	.16 .003
01628900 Unnamed tributary b/	Hawksbill Creek	Lat 38°20'47", long 78°34'35", Rockingham County, at side of State Highway 626, 1.5 mi south of Swift Run, and 2.0 mi above mouth.	1.32	1981	1-25-82 3-15-82 5-17-82 6-22-82 7-22-82 8-24-82 9-21-82	.60 1.74 .64 .75 .29 .16 .13

* Base flow.
a Furnished by Virginia State Water Control Board.
b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
01628910 West Swift Run b/	Elk Run	Lat 38°21'55", long 78°34'47", Rockingham County, at bridge on State Highway 628, 0.2 mi southeast of Swift Run, and 2.6 mi above mouth.	0.96	1981	1-25-82	0.31
					3-15-82	1.40
					5-21-82	.44
					6-21-82	1.06
01629120 East Branch Naked Creek b/	Naked Creek	Lat 38°28'07", long 78°29'50", Page County, at side of road, 1.6 mi east of Jollett, and 1.7 mi above mouth.	4.58	1981	1-25-82	2.66
					3-15-82	16.5
					5-17-82	3.26
					6-21-82	7.66
					8-24-82	.99
					9-21-82	.79
01629130 Big Creek b/	South Branch Naked Creek	Lat 38°27'37", long 78°29'35", Page County, at bridge on State Highway 759, 0.2 mi above Little Creek, and 1.8 mi east of Jollett.	2.43	1981	3-15-82	9.21
					5-17-82	1.71
					6-21-82	4.84
01629150 South Branch Naked Creek b/	Naked Creek	Lat 38°25'34", long 78°32'51", Page County, at side of Big Ugly Run Trail, 0.2 mi below Big Ugly Run, and 1.6 mi southeast of Furnace.	8.72	1981	1-25-82	4.04
					3-15-82	20.6
					5-17-82	4.93
					6-21-82	9.06
01629920 Unnamed tributary b/	Little Hawksbill Creek	Lat 38°33'23", long 78°25'55", Page County, 200 ft above culvert on State Highway 611, 0.5 mi above mouth, and 2.0 mi south of Ida.	.78	1981	1-26-82	.32
					3-19-82	2.92
					5-20-82	.44
					6-24-82	.59
					7-23-82	.43
					8-24-82	.085
					9-23-82	.091
01629950 East Hawksbill Creek b/	Hawksbill Creek	Lat 38°34'53", long 78°24'52", Page County, at side of State Highway 629, 0.7 mi southeast of Ida, and 7.2 mi above mouth.	4.03	1981	1-26-82	1.54
					3-19-82	15.8
					5-20-82	2.07
					6-24-82	3.08
Yager Spring a/	Hawksbill Creek	Lat 38°40'55", long 78°27'33", Page County, 550 ft northeast of State Highway 652, 1.1 mi north of Luray, and 1.2 mi northeast of intersection with State Highway 675.	-	1978	9-21-82	4.43
Hawksbill Creek a/	South Fork Shenandoah River	Lat 38°41'12", long 78°27'21", Page County, 300 ft west of U.S. Highway 340, 0.5 mi south of intersection with State Highway 648, and 1.5 mi north of Luray.	-	1978	9-21-82	17.6
01630100 South Fork Dry Run b/	Dry Run	Lat 38°37'37", long 78°23'23", Page County, at culvert on State Highway 696, 1.5 mi above mouth, and 2.8 mi southeast of Fairview.	1.53	1981	1-26-82	.39
					3-16-82	4.43
					5-20-82	.32
					6-24-82	.68
01630200 North Fork Dry Run b/	Dry Run	Lat 38°38'41", long 78°22'09", Page County, at culvert on State Highway 669, 1.9 mi above mouth, and 2.8 mi southwest of Thornton Gap.	2.15	1981	1-26-82	.78
					3-16-82	7.11
					5-20-82	1.05
					6-24-82	2.04
Dry Run a/	Hawksbill Creek	Lat 38°41'13", long 78°27'19", Page County, 20 ft downstream from bridge on U.S. Highway 340, 1.5 mi north of Luray.	-	1978	9-21-82	.33
Hawksbill Creek a/	South Fork Shenandoah River	Lat 38°42'29", long 78°27'24", Page County, at bridge on State Highway 648, 3.0 mi north of Luray.	-	1978-79	9-21-82	19.2
01630542 Pass Run b/	South Fork Shenandoah River	Lat 38°39'05", long 78°21'14", Page County, at bridge on State Highway 669, 1.8 mi west of Thornton Gap, and 2.5 mi above Rocky Branch.	2.00	1981	1-26-82	.82
					3-16-82	7.25
					5-20-82	1.15
					6-24-82	2.83
					7-23-82	1.11
					8-25-82	.80
					9-23-82	.47

a Furnished by Virginia State Water Control Board.
b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
01630543 Rocky Branch b/	Pass Run	Lat 38°41'06", long 78°21'10", Page County, at culvert on State Highway 612, 2.2 mi above mouth, and 2.2 mi northwest of Thornton Gap.	2.76	1981	1-26-82	0.63
					3-16-82	10.5
					5-19-82	1.11
					6-24-82	2.75
01630585 Jeremys Run b/	South Fork Shenandoah River	Lat 38°43'18", long 78°23'15", Page County, at bridge on State Highway 611, 1.6 mi southeast of Oak Hill, and 3.8 mi above mouth.	9.72	1981	1-26-82	2.80
					3-19-82	40.4
					5-19-82	2.10
					6-23-82	7.15
					7-22-82	1.7
					8-24-82	.006
					9-23-82	<.01
01630620 Overall Run	South Fork Shenandoah River	Lat 38°48'18", long 78°20'34", Page County, 0.4 mi above mouth, 2.2 mi southwest of Bentonville.	-	-	7-23-82	.63
					8-25-82	.086
					9-23-82	.038
01630649 Phils Arm Run b/	Gooney Run	Lat 38°47'34", long 78°14'29", Warren County, 1,200 ft above State Highway 631, 0.3 mi above mouth, and 1.3 mi south of Browntown.	.98	1981	1-27-82	.72
					3-18-82	4.59
					5-19-82	.52
					6-23-82	.66
					7-23-82	.81
					8-25-82	.14
					9-22-82	.18
01630650 Unnamed tributary b/	Phils Arm Run	Lat 38°47'33", long 78°14'26", Warren County, 50 ft above mouth, 1.3 mi south of Browntown.	.38	1981	1-27-82	.18
					3-18-82	2.02
					5-19-82	.28
					6-23-82	.35
01630660 Smith Creek b/	Gooney Run	Lat 38°48'23", long 78°11'55", Warren County, 150 ft above end of State Highway 634, 1.8 mi east of Browntown, and 2.4 mi above mouth.	.78	1981	1-27-82	.30
					3-18-82	5.31
					5-19-82	.79
					6-23-82	1.11
01630670 Greasy Run b/	Gooney Run	Lat 38°47'17", long 78°16'03", Warren County, at side of State Highway 631, 2.3 mi southwest of Browntown, and 3.4 mi above mouth.	1.70	1981	1-27-82	.56
					3-18-82	7.78
					5-19-82	.79
					6-23-82	1.63
01630680 Lands Run b/	Gooney Run	Lat 38°49'20", long 78°12'22", Warren County, at Shenandoah National Park boundary, 1.6 mi northeast of Browntown, and 2.0 mi above mouth.	1.38	1981	1-27-82	.48
					3-18-82	7.97
					5-19-82	.80
					6-23-82	1.27
					7-23-82	.56
					8-25-82	.27
					9-23-82	.20
Unnamed tributary	North Fork Shenandoah River	Lat 38°37'22", long 78°48'48", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.8 mi west of Broadway.	.53	-	7-15-82	0
Unnamed tributary	North Fork Shenandoah River	Lat 38°37'20", long 78°48'40", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.7 mi west of Broadway.	.25	-	7-15-82	0
Unnamed tributary	North Fork Shenandoah River	Lat 38°37'10", long 78°48'12", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.3 mi west of Broadway.	.14	-	7-15-82	0
Unnamed tributary	Long Meadow Run	Lat 38°35'33", long 78°46'35", Rockingham County, at culvert on State Highway 259, 1.2 mi southeast of Broadway, and 2.0 mi above mouth.	.89	-	7-15-82	0
Unnamed tributary	Long Meadow Run tributary	Lat 38°35'44", long 78°46'43", Rockingham County, at culvert on State Highway 259, 0.2 mi above mouth, and 1.0 mi southeast of Broadway.	.28	-	7-15-82	0

< Less than.
b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
Unnamed tributary	Stony Creek	Lat 38°53'44", long 78°40'03", Shenandoah County, at mouth, 2.5 mi northeast of Liberty Furnace.	0.79	-	7-14-82	0.076
South Fork unnamed tributary	Passage Creek	Lat 38°31'47", long 78°29'33", Shenandoah County, at culvert on State Highway 678, 0.4 mi above mouth, and 6.0 mi southwest of Detrick.	.066	-	7-14-82	0
North Fork unnamed tributary	Passage Creek	Lat 38°31'58", long 78°29'14", Shenandoah County, at culvert on State Highway 678, 0.4 mi above mouth, and 5.7 mi southwest of Detrick.	.056	-	7-14-82	0
01636202 Unnamed tributary b/	Happy Creek	Lat 38°51'17", long 78°10'49", Warren County, at culvert on State Highway 604, 800 ft above mouth, and 2.4 mi east of Glen Echo.	1.51	1981	1-27-82 3-18-82 5-18-82 6-22-82	.70 6.02 1.17 1.81
01636210 Happy Creek b/	Shenandoah River	Lat 38°54'20", long 78°11'10", Warren County, at bridge on Kerfoot Avenue, at Front Royal, 2.3 mi above Leach Run, and 2.9 mi above mouth.	14.0	1948-77‡, 1981	3-18-82 5-18-82 6- 2-82 6-23-82 7-20-82 8-25-82 9-21-82	48 4.0 10 12.0 4.1 1.0 .55
Unnamed tributary	Shenandoah River	Lat 39°01'34", long 78°04'17", Clarke County, at culvert on State Highway 624, 0.8 mi above mouth, and 3.5 mi southwest of Millwood.	.094	-	7-14-82	0
01657000 Bull Run a/	Occoquan River	Lat 38°47'52", long 77°27'28", Fairfax County, at bridge on State Highway 616, 0.5 mi downstream from Cub Run, and 3.2 mi north of Manassas.	148	1950-81‡	10- 7-81	*.34
		RAPPAHANNOCK RIVER BASIN				
01662100 Hazel River b/	Rappahannock River	Lat 38°36'54", long 78°15'44", Rappahannock County, at Shenandoah National Park boundary, 700 ft below Sams Run, and 3.2 mi north of Nethers.	5.15	1981	1-28-82 3-17-82 5-18-82 6-22-82 7-20-82 8-27-82 9-22-82	3.10 13.1 6.39 14.6 5.3 2.4 2.1
01662150 Hughes River b/	Hazel River	Lat 38°34'27", long 78°17'49", Madison County, at Nicholson Hollow Trail, 500 ft above Brokenback Run, and 1.0 mi west of Nethers.	9.92	1961, 1981	1-28-82 3-17-82 5-17-82 6-21-82	6.97 40.9 8.82 24.5
01662160 Brokenback Run b/	Hughes River	Lat 38°34'16", long 78°18'01", Madison County, at Shenandoah National Park boundary, 0.4 mi above mouth, and 1.1 mi west of Nethers.	4.30	1981	1-28-82 3-17-82 5-17-82 6-21-82 7-21-82 8-26-82 9-22-82	2.40 16.9 3.89 10.4 1.8 .60 .92
01662170 Rocky Run b/	Hughes River	Lat 38°34'39", long 78°16'57", Rappahannock County, at ford on State Highway 707, 0.4 mi above mouth, and 0.5 mi north of Nethers.	1.09	1981	1-28-82 3-17-82 5-18-82 6-21-82	.24 2.77 .50 1.43
01662190 Ragged Run b/	Popham Run	Lat 38°31'56", long 78°17'44", Madison County, at side of State Highway 645, 1.7 mi above mouth, and 1.8 mi west of Etlan.	1.14	1981	1-25-82 3-15-82 5-17-82 6-21-82 7-21-82 8-27-82 9-22-82	.65 2.66 .98 2.32 .59 .18 .19

* Base flow.
‡ Operated as a continuous-record gaging station.
a Furnished by Virginia State Water Control Board.
b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01662200 Unnamed tributary b/	Rosson Hollow Run	Lat 38°32'33", long 78°16'24", Madison County, at culvert on State Highway 646, 0.5 mi above mouth, and 1.3 mi north of Etlan.	1.05	1981	1-28-82 3-17-82 5-17-82 6-21-82	0.27 2.46 .40 1.41
01662350 North Fork Thornton River b/	Thornton River	Lat 38°41'36", long 78°16'33", Rappahannock County, 400 ft above Shenandoah National Park boundary, 3.3 mi above Piney River, and 3.4 mi northwest of Sperryville.	7.21	1981	1-29-82 3-17-82 5-18-82 6-22-82 7-20-82 8-26-82 9-21-82	2.10 37.6 4.00 10.7 2.1 .81 .56
01662370 Piney River b/	North Fork Thornton River	Lat 38°41'46", long 78°15'30", Rappahannock County, at culvert on fire road, 2.1 mi above mouth, and 3.0 mi northwest of Sperryville.	5.58	1981	1-29-82 3-17-82 5-18-82 6-22-82	2.10 28.1 3.24 8.28
01662480 Rush River b/	Covington River	Lat 38°44'29", long 78°13'08", Rappahannock County, at bridge on State Highway 622, 3.5 mi northwest of Washington, and 4.7 mi upstream from U.S. Highways 211 and 522.	2.34	1981	1-28-82 3-17-82 5-18-82 6-22-82	1.52 14.5 1.48 4.05
01665260 Rapidan River b/	Rappahannock River	Lat 38°26'38", long 78°22'11", Madison County, 300 ft west of Rapidan Road, 100 ft above Staunton River, and 1.4 mi north of Graves Mill.	9.74	1981	1-26-82 3-18-82 5-18-82 6-22-82	10.1 20.6 11.6 29.5
01665270 Staunton River b/	Rapidan River	Lat 38°26'38", long 78°22'12", Madison County, 100 ft west of Rapidan Road, 100 ft above mouth, and 1.4 mi north of Graves Mill.	4.21	1981	1-26-82 3-18-82 5-18-82 6-22-82 7-21-82 8-27-82 9-22-82	3.11 13.2 7.31 21.6 3.3 2.2 2.2
01665340 Conway River b/	Rapidan River	Lat 38°24'59", long 78°26'17", Greene and Madison Counties, at ford on State Highway 667, 1.1 mi downstream from Devils Ditch, and 3.3 mi north of Kinderhook.	9.66	1981	1-26-82 3-18-82 5-18-82 6-22-82	6.72 26.8 9.28 28.4
01665343 Unnamed tributary b/	Conway River	Lat 38°24'16", long 78°26'22", Greene County, at culvert on State Highway 667, 30 ft above mouth, and 2.5 mi north of Kinderhook.	3.62	1981	1-26-82 3-18-82 5-18-82 6-22-82	5.35 8.91 4.26 8.24
01665440 South River b/	Rapidan River	Lat 38°22'01", long 78°27'38", Greene County, at bridge on State Highway 642, 30 ft upstream from Entry Run, and 1.2 mi north of McMullen.	4.94	1963, 1981	1-26-82 3-18-82 5-18-82 6-22-82 7-21-82 8-27-82 9-22-82	4.44 13.5 2.70 9.56 2.1 .89 .84
01665710 Unnamed tributary b/	Robinson River	Lat 38°32'23", long 78°20'53", Madison County, at culvert on White Oak Canyon Trail, 800 ft above mouth, 1.2 mi downstream from Negro Run, and 3.7 mi north of Syria.	5.41	1981	1-25-82 5-17-82 7-21-82 8-27-82 9-22-82	3.30 3.16 1.3 .51 .61
01665720 Unnamed tributary b/	Robinson River	Lat 38°32'45", long 78°20'37", Madison County, 100 ft above ford on private road, 0.5 mi above mouth, and 3.9 mi southwest of Nethers.	1.01	1981	1-25-82 3-15-82 5-17-82 6-21-82	.27 1.55 .66 1.77
01665730 Cedar Run b/	Robinson River	Lat 38°32'22", long 78°21'01", Madison County, 200 ft below Shenandoah National Park boundary, 0.2 mi above mouth, and 3.7 mi north of Syria.	2.32	1981	1-25-82 5-17-82	2.20 1.43

b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01665800 Rose River b/	Robinson River	Lat 38°30'55", long 78°21'59", Madison County, at Shenandoah National Park boundary, 1.8 mi above Strother Run, and 2.8 mi northwest of Syria.	9.15	1981	1-25-82 3-15-82 5-17-82 6-21-82 7-21-82 8-27-82 9-22-82	8.09 34.9 7.90 22.5 5.7 2.0 2.3
		YORK RIVER BASIN				
Contrary Creek a/	North Anna River	Lat 38°02'07", long 77°54'10", Louisa County, 1.7 mi northeast of Mineral, 2.5 mi upstream from bridge on State Highway 522.	1.90	1975-81	10- 1-81 11-25-81 1-26-82 3-31-82 5-11-82 6-29-82 9- 1-82	*<.01 *.32 *.64 1.35 *.57 *.24 *.02
Contrary Creek a/	North Anna River	Lat 38°02'29", long 77°53'54", Louisa County, 2.0 mi upstream from bridge on State Highway 522, 2.2 mi northeast of Mineral.	2.34	1975-81	10- 1-81 11-25-81 1-26-82 3-31-82 5-11-82 6-29-82 9- 1-82	*<.02 *.35 *.84 1.55 *.66 *.24 *.02
Contrary Creek a/	North Anna River	Lat 38°02'52", long 77°53'31", Louisa County, 1.4 mi upstream from bridge on State Highway 522, 2.8 mi northeast of Mineral.	3.72	1975-81	10- 1-81 11-25-81 1-26-82 2- 1-82 3-31-82 5-11-82 6-29-82 9- 1-82	*.16 *.72 *.97 12.4 2.89 *1.40 *.59 *.20
Contrary Creek a/	North Anna River	Lat 38°03'46", long 77°51'39", Louisa County, 1.1 mi downstream from bridge on State Highway 522, 4.5 mi northeast of Mineral.	6.76	1975-81	2-24-82 3-22-82 4-15-82 5-10-82 7-14-82	5.32 17.4 *3.56 *2.66 *.99
North Anna River a/	Pamunkey River	Lat 37°49'32", long 77°25'35", Caroline-Hanover County line, at confluence with Little River, 1.8 mi downstream from bridge on State Highway 30, and 3.0 mi southeast of Doswell.	-	1979-81	10-13-81 11-17-81 2-25-82 5-24-82 7-12-82 7-28-82 8-25-82 9-28-82	*55.8 *61.7 252 93.9 77.2 61.1 69.7 115
Little River a/	North Anna River	Lat 37°49'31", long 77°25'35", Hanover County, at confluence with North Anna River, 2.4 mi downstream from bridge on Interstate Highway 95, and 3.0 mi southeast of Doswell.	-	-	7-28-82	7.83
North Anna River a/	Pamunkey River	Lat 37°48'34", long 77°25'22", Caroline-Hanover County line, 1.0 mi upstream from confluence with South Anna River, 4.1 mi southeast of Doswell.	-	-	7-28-82	76.3
North Anna River a/	Pamunkey River	Lat 37°48'14", long 77°24'32", Caroline-Hanover County line, at confluence with South Anna River, 4.7 mi northeast of Ashland, and 5.2 mi downstream from bridge on State Highway 30.	-	1979-80	7-27-82 7-28-82	69.2 74.7
South Anna River a/	Pamunkey River	Lat 37°48'12", long 77°24'31", Hanover County, at mouth, 1.0 mi downstream from bridge on State Highway 738, and 4.7 mi northeast of Ashland.	-	1979-80	7-27-82 7-28-82	47.4 48.7

* Base flow.
< Less than.
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b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		YORK RIVER BASIN--Continued				
Pamunkey River a/	York River	Lat 37°46'47", long 77°24'12", Caroline-Hanover County line, 2.0 mi northwest of Hanover, 2.6 mi upstream from bridge on U.S. Highway 301.	-	-	7-27-82	116
Pamunkey River a/	York River	Lat 37°47'02", long 77°22'18", Caroline-Hanover County line, 0.4 mi upstream from bridge on U.S. Highway 301, 1.2 mi north of Hanover.	-	-	7-26-82 7-27-82	122 112
Pamunkey River a/	York River	Lat 37°46'03", long 77°19'55", Hanover-King William County line, 100 ft above bridge State Highway 614, 2.0 mi east of Hanover.	-	-	7-27-82	138
01677200 Skimino Creek	York River	Lat 37°21'58", long 76°42'57", James City County, at bridge on State Highway 604, below Barlows Pond, 2.9 mi northeast of Lightfoot, and 4.4 mi above mouth.	-	-	3-18-82 8-27-82 9-21-82	11 3.3 .84
		BACK RIVER BASIN				
Unnamed tributary	Brick Kiln Creek	Lat 37°06'40", long 76°26'33", York County, at culvert on State Highway 134, 1.0 mi above Big Bethel Reservoir, and 1.0 mi southeast of Tabb.	0.14	1980-81	8-22-82	0
		JAMES RIVER BASIN				
Unnamed tributary	James River	Lat 37°31'37", long 79°43'00", Botetourt County, at culvert on State Highway 625, 0.4 mi above mouth, and 1.1 mi west of Buchanan.	.57	-	7-20-82	0
Unnamed tributary	Calfpasture River	Lat 38°15'37", long 79°19'02", Augusta County, at culvert on State Highway 629, 200 ft above mouth, and 0.7 mi southwest of West Augusta.	.36	-	7-15-82	0
Unnamed tributary	Spring Creek	Lat 37°56'46", long 79°11'42", Augusta County, at culvert on State Highway 620, 0.4 mi above mouth, and 1.3 mi north of Steeles Tavern.	.12	-	7-15-82	0
Unnamed tributary	South Buffalo Creek	Lat 37°43'43", long 79°34'30", Rockbridge County, at culvert on State Highway 11, 100 ft above mouth, and 8.9 mi southwest of Lexington.	.72	-	7-20-82	0
02031400 North Fork Moormans River b/	Moormans River	Lat 38°11'42", long 78°43'57", Albemarle County, 200 ft above ford on Shenandoah National Park fire road, 0.9 mi above Little Gate Branch, and 3.3 mi west of Browns Cove.	2.60	1981	3-17-82 5-19-82 6-23-82	9.43 1.42 3.25
02031410 Unnamed tributary b/	North Fork Moormans River	Lat 38°12'23", long 78°44'52", Albemarle County, 70 ft below Skyline Drive, 1.5 mi above mouth, and 4.6 mi east of Harriston.	.21	1981	3-17-82 5-19-82 6-23-82	.48 .17 .24
02031420 Unnamed tributary b/	North Fork Moormans River	Lat 38°11'50", long 78°44'32", Albemarle County, at side of Shenandoah National Park fire road, 0.5 mi above mouth, and 3.8 mi west of Browns Cove.	.70	1981	3-17-82 5-19-82 6-23-82	2.77 .41 .47

a Furnished by Virginia State Water Control Board.
b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		JAMES RIVER BASIN--Continued				
02031430 North Fork Moormans River b/	Moormans River	Lat 38°10'12", long 78°44'30", Albemarle County, at side of Shenandoah National Park fire road, 0.4 mi above Big Branch, and 4.4 mi southwest of Browns Cove.	6.19	1981	3-17-82 5-19-82 6-23-82	23.0 4.22 6.65
02031440 North Fork Moormans River b/	Moormans River	Lat 38°09'23", long 78°44'56", Albemarle County, at ford on Shenandoah National Park fire road, 0.7 mi below Big Branch, and 5.4 mi northwest of White Hall.	9.12	1981	3-17-82 5-19-82 6-23-82	25.9 6.80 9.80
02031500 North Fork Moormans River b/	Moormans River	Lat 38°08'25", long 78°45'05", Albemarle County, 300 ft above State Highway 614, 0.5 mi above confluence with South Fork, and 5.1 mi west of White Hall.	11.4	1944-46, 1952-63‡, 1977, 1981	1-28-82 3-17-82 5-19-82 6-23-82 7-22-82 8-23-82 9-20-82	7.21 41.2 6.39 10.6 1.7 3.1 .38
02031800 South Fork Moormans River b/	Moormans River	Lat 38°08'13", long 78°44'59", Albemarle County, 450 ft above Charlottesville Reservoir, 1.7 mi below Turk Branch, and 4.6 mi west of White Hall.	5.56	1981	1-28-82 3-17-82 5-19-82 6-23-82	2.85 18.2 2.66 5.85
02032100 Moormans River b/	South Fork Rivanna	Lat 38°07'45", long 78°43'27", Albemarle County, at bridge on State Highway 614, 1.0 mi below Charlottesville Reservoir, and 3.4 mi west of White Hall.	20.8	1981	1-28-82 3-17-82 5-19-82 6-23-82	5.85 57.5 2.12 12.7
02032110 Doyles River b/	Moormans River	Lat 38°12'28", long 78°40'30", Albemarle County, 200 ft above bridge on State Highway 629, 0.4 mi north of Browns Cove, and 6.2 mi above mouth.	6.44	1981	1-26-82 3-19-82 5-18-82 6-25-82	4.17 23.1 2.92 5.39
02032310 Unnamed tributary b/	Muddy Run	Lat 38°14'02", long 78°37'08", Albemarle County, at bridge on State Highway 810, 800 ft above mouth, and 1.1 mi west of Boonesville.	2.59	1981	1-26-82 3-19-82 5-18-82 6-25-82	2.19 8.50 1.36 2.21
02032545 Ivy Creek b/	Lynch River	Lat 38°16'07", long 78°36'45", Greene County, at bridge on State Highway 601, 1.0 mi below Shenandoah National Park boundary, and 2.5 mi north of Boonesville.	6.11	1981	1-26-82 3-19-82 5-18-82 6-25-82 7-21-82 8-23-82 9-20-82	3.89 18.5 1.80 3.42 .92 .19 0
Unnamed tributary a/	South Fork Rivanna River	Lat 38°08'14", long 78°29'40", Albemarle County, 100 ft below Lake Faith dam, 1.1 mi upstream from mouth, and 1.4 mi southwest of Earlysville.	-	-	12-28-81 12-29-81 3-30-82	*.084 *.061 *.12
Unnamed tributary a/	South Fork Rivanna River	Lat 38°07'28", long 78°29'52", Albemarle County, 200 ft upstream from mouth, 2.3 mi southwest of Earlysville.	-	-	12-28-81 12-28-81 12-30-81 3-30-82 3-31-82	*.52 *.51 .36 *.84 *.98
02032589 Swift Run b/	North Fork Rivanna	Lat 38°20'31", long 78°30'40", Greene County, at side of U.S. Highway 33 on Shenandoah National Park boundary, 1.4 mi northwest of Lydia.	4.80	1981	1-25-82 3-18-82 5-21-82 6-25-82	4.10 14.8 4.21 6.13
James River and Kanawha Canal a/	James River	Lat 32°33'56", long 77°32'50", Henrico County, at canal bridge just off Westham Station Road, 0.2 mi upstream from State Highway 147, and 0.5 mi west of city limits of Richmond.	-	-	3- 2-82	840

* Base flow.
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Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		JAMES RIVER BASIN--Continued				
02042752 Mill Creek	Diascund Creek	Lat 37°23'23", long 76°52'05", James City County, at culvert on State Highway 603, 0.4 mi south of Diascund, and 1.9 mi above mouth.	-	-	3-18-82 8-27-82 9-21-82	10 2.0 .85
02042754 Yarmouth Creek	Chickahominy River	Lat 37°20'48", long 76°48'56", James City County, at culvert on State Highway 632, below Cranstons Pond, and 2.4 mi south of Toano.	-	-	3-18-82 8-26-82 9-21-82	7.0 3.6 2.1
02042756 Gordon Creek	Chickahominy River	Lat 37°17'48", long 76°49'10", James City County, at bridge on State Highway 633, below Jolly Pond, and 4.7 mi southwest of Lightfoot.	-	-	3-18-82 8-26-82 9-20-82	9.8 >1.7 .14
02042765 Unnamed tributary	James River	Lat 37°15'18", long 76°48'46", James City County, at culvert on State Highway 5, 1.0 mi above mouth, and 2.6 mi west of Five Forks.	-	-	3-18-82 8-26-82 9-20-82	1.4 .30 .18
02042780 West Branch Long Hill Swamp	Powhattan Creek	Lat 37°18'50", long 76°46'02", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot.	2.47	1970-76*, 1978-81*	3-18-82 8-27-82 9-20-82	6.7 3.0 .67
Great Run	Beaverdam Creek	Lat 37°13'23", long 76°31'16", York County, at culvert on State Highway 637, 1.0 mi southwest of Yorktown, and 1.1 mi above mouth.	1.26	1981	7-29-82	0
		CHOWAN RIVER BASIN				
Buckhorn Swamp a/	Nottoway River	Lat 36°43'17", long 77°09'35", Southampton County, at bridge on State Highway 652, 5.0 mi west of Courtland.	-	-	9- 1-82	0.05
Buckhorn Swamp a/	Nottoway River	Lat 36°45'00", long 77°09'33", Southampton County, at bridge on State Highway 651, 5.4 mi northwest of Courtland.	-	-	9- 1-82	(d)
Nottoway Swamp a/	Nottoway River	Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 2.4 mi northwest of Hunterdale.	-	-	9- 2-82	.36
		ROANOKE RIVER BASIN				
Murray Run a/	Roanoke River	Lat 37°14'56", long 79°58'45", Roanoke City, at Fishburn Park just east of U.S. Highway 221, 1.7 mi above mouth.	-	-	5-14-82	.62
Falling River	Roanoke River	Lat 37°16'55", long 78°54'13", Appomattox County, at bridge on State Highway 679, 100 ft upstream from Reddy Creek, and 2.8 mi north of Spring Mills.	-	1953, 1977, 1981	10-19-81	4.6
		YADKIN RIVER BASIN				
Clarks Creek	Ararat River	Lat 36°33'57", long 80°33'12", Patrick County, at bridge on State Highway 773, 200 ft above mouth, and 3.1 mi southwest of Ararat.	10.1	-	10-21-81	1.2

> Greater than.
* Operated as a continuous-record gaging station.
a Furnished by Virginia State Water Control Board.
d Ponded, no apparent flow.

Samples are collected at partial-record, special study, and miscellaneous sites to give better areal coverage. The results of these samples are given herein.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
POTOMAC RIVER BASIN								
01626900 - SAWMILL RUN NR DOOMS, VA (LAT 38 05 46 LONG 078 48 38)								
JAN , 1982 28...	0820	2.4	21	6.7	6.4	1.0	1.0	.7
MAR 18...	1700	6.9	20	--	6.5	9.5	1.0	.7
MAY 20...	0815	1.4	22	6.5	6.5	14.0	1.2	.8
JUN 24...	0750	1.3	24	6.8	6.7	13.5	1.2	.8
01627000 - MINE BRANCH NR CRIMORA, VA (LAT 38 08 36 LONG 078 48 54)								
JAN , 1982 27...	1440	.30	15	5.8	5.8	1.5	.4	.4
MAR 16...	1615	1.2	16	--	5.6	7.0	.4	.5
MAY 20...	0915	.17	17	5.4	6.1	14.0	.4	.5
JUN 24...	0850	.34	17	6.2	6.2	13.0	.4	.5
01627100 - MEADOW RUN NR CRIMORA, VA (LAT 38 09 29 LONG 078 48 38)								
JAN , 1982 27...	1520	1.6	16	5.8	5.7	1.0	.5	.5
MAR 16...	1530	8.3	19	--	5.5	7.0	.6	.6
MAY 20...	1000	1.7	17	--	5.8	14.0	.5	.5
JUN 24...	0940	2.3	18	5.6	5.6	13.5	.5	.5
01627400 - PAINE RUN NR HARRISTON, VA. (LAT 38 11 54 LONG 078 47 33)								
JAN , 1982 27...	1330	2.6	23	5.9	5.7	2.0	.6	.7
MAR 16...	1410	11	23	--	5.5	7.0	.6	.6
MAY 20...	1125	2.1	22	5.3	6.0	15.0	.5	.6
JUN 24...	1100	3.0	22	6.0	6.0	14.5	.6	.6
01628050 - MADISON RUN AB WHITE OAK RUN NR GROTTOES, VA (LAT 38 15 05 LONG 078 44 50)								
JAN , 1982 27...	1210	1.8	22	6.7	6.5	1.0	1.0	.8
MAR 16...	1140	5.1	19	6.0	6.4	7.0	.9	.8
MAY 20...	1245	.70	22	6.0	6.6	15.0	1.1	1.0
JUN 24...	1215	.74	20	6.6	6.6	15.0	1.1	1.0
01628080 - MADISON RUN NEAR GROTTOES VA (LAT 38 15 24 LONG 078 46 06)								
JAN , 1982 27...	1110	4.0	20	6.3	6.3	2.0	.7	.7
MAR 16...	1250	13	19	--	6.3	6.5	.7	.7
MAY 20...	1330	1.9	20	6.0	6.6	15.0	.7	.7
JUN 24...	1255	2.4	21	6.7	6.6	16.0	.8	.8

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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

POTOMAC RIVER BASIN--CONTINUED

01626900 - SAWMILL RUN NR DOOMS, VA (LAT 38 05 46 LONG 078 48 38)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 28...	.9	.8	2.3	3.9	1.0	4.8	.03	<.010
MAR 18...	.9	.9	2.3	4.1	1.0	5.6	.02	<.010
MAY 20...	.9	1.1	4.0	3.7	1.0	6.0	<.01	.010
JUN 24...	1.0	1.0	4.0	4.2	1.0	6.7	.01	<.010

01627000 - MINE BRANCH NR CRIMORA, VA (LAT 38 08 36 LONG 078 48 54)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 27...	.5	.8	.50	3.1	.9	4.5	.01	<.010
MAR 16...	.6	1.0	.30	3.4	1.0	4.0	.02	<.010
MAY 20...	.5	1.0	.50	2.9	1.0	4.3	<.01	.010
JUN 24...	.6	1.1	.80	3.3	.9	4.5	.01	<.010

01627100 - MEADOW RUN NR CRIMORA, VA (LAT 38 09 29 LONG 078 48 38)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 27...	.5	1.0	.30	3.5	.8	4.8	.01	<.010
MAR 16...	.5	1.0	.00	4.3	.9	4.1	.03	<.010
MAY 20...	.5	1.0	.00	3.8	1.0	4.2	<.01	.010
JUN 24...	.5	1.1	.10	4.2	.9	4.4	.01	.010

01627400 - PAINE RUN NR HARRISTON, VA. (LAT 38 11 54 LONG 078 47 33)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 27...	.6	1.5	.30	5.5	.8	4.9	.04	<.010
MAR 16...	.6	1.6	.10	5.3	.9	4.7	.08	<.010
MAY 20...	.5	1.6	.40	4.9	1.0	3.7	<.01	.010
JUN 24...	.6	1.8	.40	5.0	.9	4.7	.01	<.010

01628050 - MADISON RUN AB WHITE OAK RUN NR GROTTOES, VA (LAT 38 15 05 LONG 078 44 50)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 27...	.9	.7	3.3	3.6	.9	6.1	.02	<.010
MAR 16...	.9	.8	3.1	3.4	.9	5.9	.04	<.010
MAY 20...	1.0	1.1	5.5	3.1	1.0	7.2	.01	.010
JUN 24...	1.0	1.1	6.5	3.2	.9	7.4	.02	<.010

01628080 - MADISON RUN NEAR GROTTOES VA (LAT 38 15 24 LONG 078 46 06)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 27...	.7	1.1	1.4	4.1	.9	4.9	<.01	<.010
MAR 16...	.7	1.2	1.5	4.2	.9	4.7	.04	<.010
MAY 20...	.7	1.4	2.1	4.2	.9	4.9	.01	.010
JUN 24...	.7	1.5	3.4	4.4	.9	5.5	.01	<.010

< Actual value is known to be less than the value shown

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
POTOMAC RIVER BASIN--CONTINUED								
01628300 - LOWER LEWIS RUN NR LYNWOOD, VA (LAT 38 18 06 LONG 078 44 02)								
MAR , 1982 16...	.6	1.6	.10	5.1	.8	4.7	.13	<.010
MAY 20...	.6	1.6	.90	4.7	.9	4.5	.09	.010
JUN 21...	.6	1.6	.70	4.9	.9	4.8	.04	<.010
01628320 - LOWER LEWIS RUN TRIB NR LYNWOOD VA (LAT 38 18 03 LONG 078 44 20)								
MAR , 1982 16...	.6	.5	.00	2.9	1.0	3.8	.02	<.010
MAY 20...	.5	.5	.20	2.1	1.0	3.6	<.01	.010
JUN 24...	.5	.5	.00	2.5	.9	3.8	<.01	.010
01628350 - UPPER LEWIS RUN NEAR LYNNWOOD, VA (LAT 38 17 35 LONG 078 44 55)								
JAN , 1982 29...	.6	1.7	.30	5.8	.9	5.6	.01	<.010
MAY 20...	.6	2.1	.60	5.3	.9	4.5	.01	.010
JUN 24...	.6	2.0	.40	5.3	.9	5.1	.01	<.010
01628530 - HANGMAN RUN NR ROCKY BAR VA (LAT 38 18 42 LONG 078 43 02)								
JUN , 1982 10...	.4	.5	.00	4.2	.8	3.8	<.01	.010
25...	.5	.5	.00	4.2	.9	4.1	<.01	<.010
01628700 - TWOMILE RUN NR MCGAHEYSVILLE, VA (LAT 38 20 04 LONG 078 40 20)								
JAN , 1982 27...	.6	1.3	.60	4.9	.9	5.3	.07	<.010
MAR 16...	.6	1.4	.40	4.6	.8	4.7	.11	<.010
MAY 21...	.7	1.5	.90	4.0	.8	4.7	.08	.030
JUN 22...	.6	1.5	.70	4.3	.8	4.8	.05	<.010
01628750 - WALLS RUN NR ROCKY BAR VA (LAT 38 21 23 LONG 078 39 47)								
JUN , 1982 10...	.4	.5	.00	4.3	.8	3.7	.01	.010
22...	.5	.7	.00	4.4	.8	4.0	<.01	<.010
01628900 - HAWKSBILL CK TRIB NR SWIFT RUN, VA (LAT 38 20 47 LONG 078 34 35)								
JAN , 1982 25...	2.1	.3	12	4.2	1.2	12	.39	<.010
MAR 15...	1.7	.3	8.7	4.6	1.2	11	.39	<.010
MAY 17...	2.2	.3	14	3.7	1.4	13	.01	.020
JUN 22...	2.1	.2	14	3.9	1.1	12	.09	.010

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
POTOMAC RIVER BASIN--CONTINUED								
01628300 - LOWER LEWIS RUN NR LYNWOOD, VA (LAT 38 18 06 LONG 078 44 02)								
MAR , 1982								
16...	0940	.66	22	5.6	5.5	7.0	.7	.6
MAY								
20...	1515	.22	23	4.9	5.5	15.0	.6	.6
JUN								
21...	1445	.30	21	5.5	5.5	14.0	.6	.6
01628320 - LOWER LEWIS RUN TRIB NR LYNWOOD VA (LAT 38 18 03 LONG 078 44 20)								
MAR , 1982								
16...	1000	.24	16	4.7	5.0	7.0	.2	.5
MAY								
20...	1445	.04	17	--	5.2	15.0	.2	.4
JUN								
24...	1425	.32	15	5.0	5.1	14.0	.1	.4
01628350 - UPPER LEWIS RUN NEAR LYNNWOOD, VA (LAT 38 17 35 LONG 078 44 55)								
JAN , 1982								
29...	1730	.30	22	--	5.6	1.0	.5	.7
MAY								
20...	1410	.35	22	4.9	5.5	16.0	.5	.6
JUN								
24...	1345	.52	21	5.7	5.6	15.5	.5	.6
01628530 - HANGMAN RUN NR ROCKY BAR VA (LAT 38 18 42 LONG 078 43 02)								
JUN , 1982								
10...	1230	.19	19	4.8	5.0	16.0	.4	.5
25...	0755	.07	22	4.9	5.0	14.0	.4	.6
01628700 - TWOMILE RUN NR MCGAHEYSVILLE, VA (LAT 38 20 04 LONG 078 40 20)								
JAN , 1982								
27...	0930	.36	22	5.9	5.8	2.0	.7	.6
MAR								
16...	0820	4.7	20	5.8	5.8	6.0	.6	.6
MAY								
21...	0845	.92	20	6.0	6.0	14.5	.5	.6
JUN								
22...	1415	1.6	20	5.8	6.0	15.0	.5	.6
01628750 - WALLS RUN NR ROCKY BAR VA (LAT 38 21 23 LONG 078 39 47)								
JUN , 1982								
10...	1320	.16	19	4.8	5.0	17.0	.6	.5
22...	1525	<.01	23	4.7	5.0	15.0	.6	.6
01628900 - HAWKSBILL CK TRIB NR SWIFT RUN, VA (LAT 38 20 47 LONG 078 34 35)								
JAN , 1982								
25...	1527	.60	40	7.3	7.2	2.5	4.0	1.3
MAR								
15...	1540	1.7	36	6.6	7.0	6.0	3.3	1.2
MAY								
17...	1420	.64	40	7.0	7.2	15.0	4.1	1.4
JUN								
22...	1305	.75	37	7.0	7.2	15.0	3.8	1.3

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
POTOMAC RIVER BASIN--CONTINUED								
01628910 - WEST SWIFT RUN AT SWIFT RUN, VA. (LAT 38 21 55 LONG 078 34 47)								
JAN , 1982								
25...	1605	.31	66	7.2	7.1	1.5	4.7	2.0
MAR 15...	1625	1.4	63	--	7.0	6.0	4.4	1.8
MAY 21...	1015	.44	45	7.0	7.1	14.0	3.9	1.7
JUN 21...	1430	1.1	69	7.1	7.2	15.0	5.2	2.0
01629120 - E BR NAKED CREEK NEAR JOLLETT, VA (LAT 38 28 07 LONG 078 29 50)								
JAN , 1982								
29...	1700	4.9	28	6.8	6.8	1.0	2.1	1.0
MAR 15...	1310	16	23	--	6.8	1.5	2.2	1.1
MAY 17...	1200	3.3	28	7.0	7.1	15.0	2.3	1.1
JUN 21...	1320	7.7	25	7.0	7.1	15.0	2.2	1.1
01629130 - BIG CREEK NEAR JOLLETT, VA (LAT 38 27 37 LONG 078 29 35)								
JAN , 1982								
25...	1222	2.7	29	7.4	7.1	1.5	2.7	1.1
MAR 15...	1220	9.2	27	6.6	7.0	5.0	2.3	1.1
MAY 17...	1245	1.7	33	7.2	7.4	14.0	3.3	1.4
JUN 21...	1240	4.8	27	7.3	7.2	14.5	2.6	1.1
01629150 - S BR NAKED CK BL BIG UGLY BR NR FURNACE, VA (LAT 38 25 34 LONG 078 32 51)								
JAN , 1982								
25...	1430	4.0	35	7.2	7.1	1.0	3.0	1.3
MAR 15...	1420	21	31	6.6	7.0	1.0	2.6	1.2
MAY 17...	1100	4.9	42	7.4	7.4	15.5	3.3	1.4
JUN 21...	1120	9.1	32	7.5	7.4	14.5	3.1	1.3
01629920 - LITTLE HAWKSBILL CK TRIB NR IDA, VA. (LAT 38 33 23 LONG 078 25 55)								
JAN , 1982								
26...	1040	.32	25	6.2	6.5	1.0	1.9	.6
MAR 19...	1400	2.9	26	6.7	6.6	8.0	2.0	.6
MAY 20...	1240	.44	27	6.8	6.8	14.0	2.1	.6
JUN 24...	1215	.59	25	6.8	6.8	14.5	1.9	.6
01629950 - EAST HAWKSBILL CREEK NEAR IDA, VA (LAT 38 34 53 LONG 078 24 52)								
JAN , 1982								
26...	1230	1.5	30	6.1	6.5	3.0	2.4	.7
MAR 18...	1300	16	28	6.8	6.6	8.0	2.5	.7
MAY 20...	1330	2.1	30	6.4	6.7	14.0	2.5	.7
JUN 24...	1320	3.1	27	6.7	6.7	14.0	2.5	.7

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
POTOMAC RIVER BASIN--CONTINUED								
01628910 - WEST SWIFT RUN AT SWIFT RUN, VA. (LAT 38 21 55 LONG 078 34 47)								
JAN , 1982 25...	5.0	.4	16	2.7	7.8	14	.27	<.010
MAR 15...	5.1	.4	13	4.3	8.9	13	.17	<.010
MAY 21...	2.8	.3	16	2.1	2.8	15	.14	.010
JUN 21...	5.5	.4	17	2.8	9.5	15	.13	<.010
01629120 - E BR NAKED CREEK NEAR JOLLETT, VA (LAT 38 28 07 LONG 078 29 50)								
JAN , 1982 29...	1.5	.4	6.0	3.1	1.0	8.3	.88	<.010
MAR 15...	1.4	.4	5.4	3.6	.9	7.9	.77	<.010
MAY 17...	1.5	.4	7.8	2.7	1.0	9.1	.52	.020
JUN 21...	1.5	.3	8.1	2.3	.8	9.0	.44	<.010
01629130 - BIG CREEK NEAR JOLLETT, VA (LAT 38 27 37 LONG 078 29 35)								
JAN , 1982 25...	1.4	.3	7.8	4.0	1.0	8.3	.42	<.010
MAR 15...	1.3	.3	6.1	4.3	.9	7.8	.36	<.010
MAY 17...	1.5	.3	12	3.4	1.1	9.1	.26	.010
JUN 21...	1.5	.3	9.2	3.1	.9	9.0	.18	<.010
01629150 - S BR NAKED CK BL BIG UGLY BR NR FURNACE, VA (LAT 38 25 34 LONG 078 32 51)								
JAN , 1982 25...	2.4	.6	9.3	5.0	1.3	7.6	.17	.010
MAR 15...	1.4	.6	6.9	5.3	1.2	7.9	.21	<.010
MAY 17...	1.5	.7	12	4.2	1.2	7.3	.07	.010
JUN 21...	1.5	.6	11	4.2	1.0	9.0	.06	<.010
01629920 - LITTLE HAWKSBILL CK TRIB NR IDA, VA. (LAT 38 33 23 LONG 078 25 55)								
JAN , 1982 26...	1.4	.2	3.1	4.0	1.1	9.1	.32	<.010
MAR 19...	1.4	.2	2.6	4.6	1.0	8.5	.30	<.010
MAY 20...	1.6	.2	5.5	3.5	.9	11	<.01	.010
JUN 24...	1.6	.2	5.0	4.2	.9	9.9	.09	<.010
01629950 - EAST HAWKSBILL CREEK NEAR IDA, VA (LAT 38 34 53 LONG 078 24 52)								
JAN , 1982 26...	1.4	.2	3.7	4.8	1.3	8.6	.29	<.010
MAR 18...	1.3	.2	2.8	5.9	1.2	6.4	.39	<.010
MAY 20...	1.5	.2	5.7	4.6	1.1	9.0	.18	.020
JUN 24...	1.5	.2	5.2	5.1	1.0	8.6	.12	.010

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
POTOMAC RIVER BASIN--CONTINUED								
01630100 - SOUTH FORK DRY RUN NR FAIRVIEW, VA (LAT 38 37 37 LONG 078 23 23)								
JAN , 1982								
26...	1300	.39	32	--	6.4	2.0	2.5	.8
MAR								
16...	1615	4.4	32	6.6	6.5	4.5	2.7	.8
MAY								
20...	1430	.32	30	6.8	6.6	13.5	2.7	.8
JUN								
24...	1415	.68	28	6.6	6.7	14.5	2.8	.8
01630200 - N FK DRY RUN NR THORNTON GAP, VA (LAT 38 38 41 LONG 078 22 09)								
JAN , 1982								
26...	1400	.78	30	6.4	6.7	1.0	2.2	.8
MAR								
16...	1520	7.1	26	6.7	6.6	6.0	2.0	.7
MAY								
20...	1615	1.0	32	6.9	6.9	20.5	2.1	.7
JUN								
24...	1500	2.0	22	7.0	6.9	20.0	2.1	.8
01630542 - PASS RUN NR THORNTON GAP, VA (LAT 38 39 05 LONG 078 21 14)								
JAN , 1982								
26...	1500	.82	76	6.5	7.0	1.0	5.9	2.7
MAR								
16...	1430	7.2	70	7.0	6.9	5.0	4.5	1.9
MAY								
20...	1700	1.2	75	7.3	7.2	16.0	5.3	2.3
JUN								
24...	1530	2.8	81	7.3	7.3	15.5	5.6	2.4
01630543 - ROCKY BR NR THORNTON GAP, VA (LAT 38 41 06 LONG 078 21 10)								
JAN , 1982								
26...	1600	.63	43	6.7	7.1	1.0	3.7	1.6
MAR								
16...	1710	10	39	7.2	7.0	5.5	2.9	1.5
MAY								
19...	1620	1.1	46	7.5	7.4	18.5	3.5	1.7
JUN								
24...	1630	2.8	41	7.3	7.3	17.5	3.3	1.6
01630585 - JEREMYS RUN NR OAK HILL, VA (LAT 38 43 18 LONG 078 23 15)								
JAN , 1982								
26...	1700	2.8	35	--	6.9	.5	2.4	1.4
MAR								
19...	1130	40	30	6.9	6.9	8.5	2.3	1.4
MAY								
19...	1700	2.1	40	6.7	7.0	17.5	3.0	1.7
JUN								
23...	1145	7.2	37	7.1	7.1	17.0	2.8	1.5
01630649 - PHILS ARM RUN NR BROWNTOWN, VA (LAT 38 47 34 LONG 078 14 29)								
JAN , 1982								
27...	1110	.72	29	6.3	6.6	.5	2.0	.8
MAR								
18...	1510	4.6	29	6.8	6.6	9.0	2.0	.8
MAY								
19...	1300	.52	29	6.5	6.9	16.5	2.3	.9
JUN								
23...	1520	.66	28	7.0	6.9	17.0	2.2	.8

POTOMAC RIVER BASIN--CONTINUED

01630100 - SOUTH FORK DRY RUN NR FAIRVIEW, VA (LAT 38 37 37 LONG 078 23 23)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
26...	1.5	.3	3.3	6.6	1.4	8.5	.54	<.010
MAR								
16...	1.6	.3	2.9	6.6	1.1	8.4	.55	<.010
MAY								
20...	1.7	.4	5.9	5.9	1.3	9.8	.20	.010
JUN								
24...	1.8	.3	6.0	5.7	1.3	9.4	.16	<.010

01630200 - N FK DRY RUN NR THORNTON GAP, VA (LAT 38 38 41 LONG 078 22 09)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
26...	1.9	.3	4.3	5.0	1.3	11	.46	.010
MAR								
16...	1.7	.4	3.3	5.2	1.1	9.1	.42	<.010
MAY								
20...	1.8	.4	5.3	4.8	1.1	10	.27	.010
JUN								
24...	1.8	.4	5.3	4.5	1.1	10	.18	<.010

01630542 - PASS RUN NR THORNTON GAP, VA (LAT 38 39 05 LONG 078 21 14)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
26...	5.5	.4	11	3.2	15	13	.32	.010
MAR								
16...	4.9	.4	7.9	3.5	12	10	.37	<.010
MAY								
20...	3.9	.4	12	2.6	14	14	.04	.010
JUN								
24...	5.8	.3	14	2.1	13	13	.11	.010

01630543 - ROCKY BR NR THORNTON GAP, VA (LAT 38 41 06 LONG 078 21 10)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
26...	2.0	.4	12	4.7	1.9	12	.35	.010
MAR								
16...	1.8	.5	8.5	5.2	1.8	10	.30	<.010
MAY								
19...	2.1	.5	15	3.2	1.3	14	<.01	.020
JUN								
24...	2.0	.4	14	2.4	1.2	13	.09	.010

01630585 - JEREMYS RUN NR OAK HILL, VA (LAT 38 43 18 LONG 078 23 15)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
26...	1.4	.5	6.6	6.5	1.3	7.9	.13	<.010
MAR								
19...	1.4	.7	5.3	7.2	1.2	8.3	.21	<.010
MAY								
19...	1.7	.8	11	5.7	1.4	10	<.01	.010
JUN								
23...	1.6	.7	9.4	5.9	1.2	9.8	.06	<.010

01630649 - PHILS ARM RUN NR BROWNTOWN, VA (LAT 38 47 34 LONG 078 14 29)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982								
27...	2.0	.3	4.4	5.0	1.0	12	.38	.010
MAR								
18...	1.8	.4	3.2	5.8	1.0	9.8	.52	<.010
MAY								
19...	2.1	.4	8.1	4.5	1.2	14	.01	.020
JUN								
23...	2.0	.3	6.1	4.7	1.0	12	.08	<.010

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

POTOMAC RIVER BASIN--CONTINUED

01630650 - PHILS ARM RUN TRIB NR BROWNTOWN, VA (LAT 38 47 33 LONG 078 14 26)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 27...	1100	.18	28	6.3	6.7	.5	1.8	.7
MAR 18...	1500	2.0	26	6.9	6.7	9.5	1.6	.7
MAY 19...	1245	.28	28	6.5	7.0	17.5	2.1	.8
JUN 23...	1515	.35	30	7.1	7.1	18.0	2.0	.8

01630660 - SMITH CREEK NR BROWNTOWN, VA (LAT 38 48 23 LONG 078 11 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 27...	1200	.30	29	--	6.6	1.0	1.8	.6
MAR 18...	1620	5.3	31	6.7	6.5	8.0	2.1	.7
MAY 19...	1200	.79	31	6.7	6.8	14.5	2.1	.7
JUN 23...	1630	1.1	29	6.9	6.8	15.0	2.1	.7

01630670 - GREASY RUN NR BROWNTOWN, VA (LAT 38 47 17 LONG 078 16 03)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 27...	1000	.56	42	6.6	6.9	.0	3.5	1.3
MAR 18...	1345	7.8	35	7.1	6.9	8.0	3.2	1.2
MAY 19...	1400	.79	40	7.3	7.3	18.5	3.8	1.4
JUN 23...	1430	1.6	38	7.2	7.2	18.0	3.5	1.3

01630680 - LANDS RUN NR BROWNTOWN, VA (LAT 38 49 20 LONG 078 12 22)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 27...	1300	.48	39	--	6.8	.5	2.7	1.0
MAR 18...	1720	8.0	41	6.6	6.9	8.5	2.9	1.2
MAY 19...	1115	.80	38	7.1	7.1	16.5	2.7	1.1
JUN 23...	1720	1.3	38	7.1	7.1	16.5	2.7	1.0

01636202 - HAPPY CK TRIB NR GLEN ECHO, VA (LAT 38 51 17 LONG 078 10 49)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 27...	1600	.70	34	6.9	6.9	.0	2.7	1.0
MAR 18...	1230	6.0	40	7.2	7.0	7.0	3.2	1.3
MAY 18...	1730	1.2	37	7.3	7.3	16.0	3.0	1.1
JUN 22...	1930	1.8	38	7.1	7.1	16.0	3.0	1.1

RAPPAHANNOCK RIVER BASIN

01662100 - HAZEL RIVER NR NETHERS, VA (LAT 38 36 54 LONG 078 15 44)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 28...	1700	3.1	20	--	6.7	1.5	1.3	.5
MAR 17...	1500	18	18	6.5	6.6	8.5	1.2	.5
MAY 18...	1220	6.4	19	7.0	6.9	15.0	1.2	.5
JUN 22...	1200	15	17	6.9	6.9	16.0	1.1	.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
POTOMAC RIVER BASIN--CONTINUED								
01630650 - PHILS ARM RUN TRIB NR BROWNTOWN, VA (LAT 38 47 33 LONG 078 14 26)								
JAN , 1982 27...	2.4	.4	6.1	5.0	1.1	15	.06	<.010
MAR 18...	2.2	.5	4.5	5.4	1.2	12	.05	.010
MAY 19...	2.5	.4	8.8	3.9	1.2	17	.05	.010
JUN 23...	2.6	.5	8.5	3.6	1.1	17	.03	<.010
01630660 - SMITH CREEK NR BROWNTOWN, VA (LAT 38 48 23 LONG 078 11 55)								
JAN , 1982 27...	2.1	.3	3.5	4.9	1.1	12	.44	<.010
MAR 18...	2.0	.4	2.6	6.5	1.1	10	.61	<.010
MAY 19...	2.1	.3	5.3	4.6	1.2	12	.02	.010
JUN 23...	2.1	.3	4.8	4.9	1.1	12	.34	<.010
01630670 - GREASY RUN NR BROWNTOWN, VA (LAT 38 47 17 LONG 078 16 03)								
JAN , 1982 27...	2.0	.3	9.4	5.9	1.5	12	.49	.010
MAR 18...	1.7	.3	5.9	7.0	1.2	9.7	.53	<.010
MAY 19...	2.1	.5	13	5.0	1.4	13	.01	.020
JUN 23...	2.1	.4	11	5.1	1.2	12	.12	.010
01630680 - LANDS RUN NR BROWNTOWN, VA (LAT 38 49 20 LONG 078 12 22)								
JAN , 1982 27...	2.4	.4	6.5	6.3	1.4	13	.47	.010
MAR 18...	2.4	.5	5.3	8.0	1.3	12	.50	<.010
MAY 19...	2.6	.5	7.7	5.9	1.3	14	.01	.020
JUN 23...	2.5	.4	7.8	6.0	1.2	13	.20	.010
01636202 - HAPPY CK TRIB NR GLEN ECHO, VA (LAT 38 51 17 LONG 078 10 49)								
JAN , 1982 27...	2.2	.5	8.6	3.7	1.4	15	.59	<.010
MAR 18...	2.1	.4	7.3	6.3	1.3	12	.73	<.010
MAY 18...	2.2	.4	11	3.4	1.4	15	.01	.010
JUN 22...	2.3	.5	11	3.8	1.3	15	.30	.010
RAPPAHANNOCK RIVER BASIN--CONTINUED								
01662100 - HAZEL RIVER NR NETHERS, VA (LAT 38 36 54 LONG 078 15 44)								
JAN , 1982 28...	1.4	.4	4.4	2.1	1.0	9.5	.17	.020
MAR 17...	1.4	.4	2.9	2.7	.9	8.1	.12	<.010
MAY 18...	1.4	.4	4.8	1.8	1.0	9.7	.08	.010
JUN 22...	1.4	.4	4.4	1.6	.9	9.2	.05	<.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
RAPPAHANNOCK RIVER BASIN--CONTINUED								
01662150 - HUGHES RIVER NR NETHERS, VA (LAT 38 34 27 LONG 078 17 49)								
JAN , 1982 28...	1300	7.0	20	--	6.7	1.5	1.4	.5
MAR 17...	1300	41	21	6.8	6.7	9.0	1.3	.6
MAY 17...	1750	8.8	22	7.0	6.9	16.0	1.4	.6
JUN 21...	1700	24	20	6.8	6.8	16.5	1.4	.5
01662160 - BROKENBACK RUN NR NETHERS, VA (LAT 38 34 16 LONG 078 18 01)								
JAN , 1982 28...	1230	2.4	18	6.2	6.6	1.0	1.1	.4
MAR 17...	1212	17	17	6.7	6.6	7.5	1.0	.4
MAY 17...	1700	3.9	18	6.8	6.8	15.0	1.2	.4
JUN 21...	1615	10	16	6.7	6.7	16.5	1.1	.4
01662170 - ROCKY RUN AT NETHERS, VA (LAT 38 34 39 LONG 078 16 57)								
JAN , 1982 28...	1400	.24	23	5.7	6.5	1.0	1.1	.5
MAR 17...	1400	2.8	21	6.5	6.6	9.5	1.1	.5
MAY 18...	1115	.50	24	6.8	6.8	15.5	1.3	.6
JUN 21...	1800	1.4	23	6.8	6.8	15.5	1.2	.5
01662190 - RAGGED RUN NR ETLAN, VA (LAT 38 31 56 LONG 078 17 44)								
JAN , 1982 25...	1700	.65	19	6.4	6.6	3.0	1.1	.4
MAR 15...	1640	2.7	18	6.6	6.6	5.0	.9	.4
MAY 17...	1500	.98	21	6.8	6.8	17.5	1.2	.5
JUN 21...	1430	2.3	20	6.8	6.8	17.5	1.1	.5
01662200 - ROSSON HOLLOW RUN TRIB NR ETLAN, VA. (LAT 38 32 33 LONG 078 16 24)								
JAN , 1982 28...	1030	.27	22	6.5	6.6	1.0	1.1	.4
MAR 17...	1110	2.5	20	6.7	6.6	8.5	1.0	.4
MAY 17...	1600	.40	24	6.8	6.8	19.5	1.3	.5
JUN 21...	1530	1.4	21	6.8	6.8	19.5	1.2	.5
01662350 - NORTH FORK THORNTON RIVER NR SPERRYVILLE, VA (LAT 38 41 36 LONG 078 16 33)								
JAN , 1982 29...	1400	2.1	36	--	7.1	1.0	2.7	1.4
MAR 17...	1620	38	37	7.3	7.1	9.0	2.9	1.6
MAY 18...	1445	4.0	39	7.3	7.3	16.5	3.1	1.7
JUN 22...	1520	11	38	7.3	7.3	15.5	3.0	1.7

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

RAPPAHANNOCK RIVER BASIN--CONTINUED

01662150 - HUGHES RIVER NR NETHERS, VA (LAT 38 34 27 LONG 078 17 49)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 28...	1.4	.3	4.1	2.5	1.1	8.8	.23	<.010
MAR 17...	1.4	.3	3.5	3.0	1.2	8.2	.17	<.010
MAY 17...	1.5	.3	5.0	2.3	1.2	9.1	.17	.010
JUN 21...	1.5	.3	4.8	2.0	1.0	8.8	.11	<.010

01662160 - BROKENBACK RUN NR NETHERS, VA (LAT 38 34 16 LONG 078 18 01)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 28...	1.3	.3	3.3	2.5	.9	8.4	.16	.010
MAR 17...	1.3	.3	2.7	3.0	.9	7.8	.08	.010
MAY 17...	1.4	.4	4.4	2.1	1.0	8.6	.01	.010
JUN 21...	1.3	.4	3.8	1.8	.9	8.1	.03	<.010

01662170 - ROCKY RUN AT NETHERS, VA (LAT 38 34 39 LONG 078 16 57)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 28...	1.9	.5	3.8	3.5	1.1	10	.09	<.010
MAR 17...	1.8	.5	3.0	3.8	1.0	9.3	.04	<.010
MAY 18...	2.3	.5	5.3	3.0	1.1	11	.05	.010
JUN 21...	2.0	.6	5.2	3.1	1.0	11	.01	<.010

01662190 - RAGGED RUN NR ETLAN, VA (LAT 38 31 56 LONG 078 17 44)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 25...	1.5	.5	3.9	2.6	1.0	9.5	.02	<.010
MAR 15...	1.5	.4	2.9	2.7	.9	8.4	.04	<.010
MAY 17...	1.6	.5	4.8	2.3	1.1	10	.01	.010
JUN 21...	1.7	.5	4.3	2.6	1.0	10	.03	<.010

01662200 - ROSSON HOLLOW RUN TRIB NR ETLAN, VA. (LAT 38 32 33 LONG 078 16 24)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 28...	1.9	.5	4.1	3.1	1.2	12	.04	.010
MAR 17...	1.8	.5	3.0	3.6	1.0	9.6	.01	<.010
MAY 17...	2.1	.6	5.7	2.8	1.2	12	.01	.010
JUN 21...	2.0	.6	5.3	2.7	1.1	12	.02	<.010

01662350 - NORTH FORK THORNTON RIVER NR SPERRYVILLE, VA (LAT 38 41 36 LONG 078 16 33)

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAN , 1982 29...	2.0	.3	9.9	4.4	1.3	13	.32	<.010
MAR 17...	2.0	.4	8.5	5.8	1.2	12	.43	<.010
MAY 18...	2.3	.4	12	3.7	1.3	15	.01	.020
JUN 22...	2.2	.4	13	3.7	1.1	15	.20	<.010

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

RAPPAHANNOCK RIVER BASIN--CONTINUED

01662370 - PINEY RIVER NEAR SPERRYVILLE, VA (LAT 38 41 46 LONG 078 15 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 29...	1300	2.1	30	6.8	7.0	2.0	2.3	1.1
MAR 17...	1710	28	31	7.0	6.9	8.0	2.4	1.2
MAY 18...	1350	3.2	33	7.3	7.2	16.5	2.7	1.3
JUN 22...	1430	8.3	32	7.2	7.3	16.0	2.7	1.3

01662480 - RUSH RIVER AT RT 622 NR WASHINGTON, VA (LAT 38 44 29 LONG 078 13 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 28...	1630	1.5	41	--	7.0	1.0	3.5	1.4
MAR 17...	1815	14	43	7.1	7.0	8.0	3.7	1.5
MAY 18...	1615	1.5	48	7.3	7.3	19.5	4.3	1.6
JUN 21...	1815	4.0	46	7.2	7.2	17.5	4.2	1.7

01665260 - RAPIDAN RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 11)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1000	10	20	7.3	6.7	.5	1.4	.5
MAR 18...	1000	21	18	6.3	6.8	7.5	1.5	.5
MAY 18...	0815	12	20	6.7	7.0	14.0	1.6	.5
JUN 22...	0800	30	20	6.8	6.9	13.0	1.5	.5

01665270 - STAUNTON RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 12)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	0900	3.1	17	7.1	6.6	1.5	1.1	.3
MAR 18...	1035	13	16	6.1	6.6	7.5	1.1	.3
MAY 18...	0900	7.3	18	6.4	6.8	13.0	1.2	.3
JUN 23...	0840	22	17	6.7	6.7	13.0	1.1	.3

01665340 - CONWAY RIVER NR KINDERHOOK, VA (LAT 38 24 59 LONG 078 26 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1200	6.7	21	6.8	6.7	1.0	1.5	.5
MAR 18...	1240	27	21	6.0	6.7	9.0	1.6	.6
MAY 18...	1015	9.3	20	6.7	6.9	13.5	1.6	.5
JUN 22...	1005	28	21	6.7	6.9	13.0	1.6	.6

01665343 - CONWAY RIVER TRIB NEAR KINDERHOOK, VA (LAT 38 24 16 LONG 078 26 22)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1110	5.4	24	6.9	6.8	3.0	1.8	.6
MAR 18...	1330	8.9	23	6.4	6.9	8.0	1.9	.6
MAY 18...	1110	4.3	25	6.7	7.1	14.0	2.0	.6
JUN 22...	1100	8.2	26	6.9	7.0	13.5	2.0	.6

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
RAPPAHANNOCK RIVER BASIN--CONTINUED								
01662370 - PINEY RIVER NEAR SPERRYVILLE, VA (LAT 38 41 46 LONG 078 15 30)								
JAN , 1982 29...	1.5	.2	7.6	3.4	1.2	11	.32	<.010
MAR 17...	1.6	.2	6.8	4.6	1.1	11	.45	<.010
MAY 18...	1.9	.2	11	3.0	1.3	13	.12	.010
JUN 22...	1.8	.3	11	3.0	1.0	13	.14	<.010
01662480 - RUSH RIVER AT RT 622 NR WASHINGTON, VA (LAT 38 44 29 LONG 078 13 08)								
JAN , 1982 28...	1.9	.3	9.6	5.7	1.5	11	.43	<.010
MAR 17...	1.9	.4	8.2	7.1	1.3	10	.58	<.010
MAY 18...	2.3	.7	14	5.1	1.6	13	.01	.030
JUN 21...	2.2	.4	14	5.7	1.3	13	.17	.010
01665260 - RAPIDAN RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 11)								
JAN , 1982 26...	1.2	.2	4.8	1.7	.8	8.0	.22	<.010
MAR 18...	1.2	.2	4.4	2.1	.8	7.5	.18	<.010
MAY 18...	1.3	.3	5.3	1.7	.9	7.8	.15	.010
JUN 22...	1.3	.5	5.4	1.6	.9	7.9	.11	<.010
01665270 - STAUNTON RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 12)								
JAN , 1982 26...	1.3	.3	3.0	1.9	.8	7.9	.11	<.010
MAR 18...	1.3	.3	2.8	2.1	.8	7.4	.11	<.010
MAY 18...	1.3	.3	3.6	1.8	.9	7.7	.13	.010
JUN 23...	1.4	.3	3.6	1.6	.8	7.5	.09	<.010
01665340 - CONWAY RIVER NR KINDERHOOK, VA (LAT 38 24 59 LONG 078 26 17)								
JAN , 1982 26...	1.4	.3	3.8	3.2	.9	8.6	.12	.010
MAR 18...	1.5	.3	3.6	4.1	.9	8.2	.11	<.010
MAY 18...	1.6	.3	4.8	3.0	1.0	8.6	.12	.010
JUN 22...	1.5	.3	4.8	3.0	.9	8.4	.07	<.010
01665343 - CONWAY RIVER TRIB NEAR KINDERHOOK, VA (LAT 38 24 16 LONG 078 26 22)								
JAN , 1982 26...	1.6	.2	5.0	3.3	.9	9.5	.18	<.010
MAR 18...	1.7	.2	5.0	3.7	.9	9.1	.18	<.010
MAY 18...	1.8	.3	6.4	2.8	1.0	9.8	<.01	.010
JUN 22...	1.8	.3	6.7	3.1	.9	9.4	.09	.010

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
RAPPAHANNOCK RIVER BASIN--CONTINUED								
01665440 - SOUTH RIVER NR MCMULLEN, VA (LAT 38 22 01 LONG 078 27 38)								
JAN , 1982 26...	1320	4.4	29	7.0	6.9	2.5	2.3	.9
MAR 18...	1435	14	29	6.5	6.9	9.0	2.5	1.0
MAY 18...	1200	2.7	24	6.7	7.1	14.0	2.6	1.0
JUN 22...	1150	9.6	28	6.8	7.1	14.0	2.3	1.0
01665710 - WHITE OAK CANYON TRIB NR SYRIA, VA (LAT 38 32 23 LONG 078 20 53)								
JAN , 1982 25...	1400	3.3	24	6.9	6.8	2.0	1.8	.8
MAR 15...	1530	11	22	6.3	6.8	4.5	1.8	.9
MAY 17...	1230	3.2	27	7.1	7.1	16.0	2.1	1.0
JUN 21...	1200	8.2	24	7.0	7.0	16.0	1.9	.9
01665720 - BERRY HOLLOW TRIB NR NETHERS, VA (LAT 38 32 45 LONG 078 20 37)								
JAN , 1982 25...	1530	.27	23	6.3	6.7	2.0	1.4	.4
MAR 15...	1400	1.6	21	6.7	6.6	6.0	1.3	.4
MAY 17...	1320	.66	23	6.9	6.8	14.0	1.3	.5
JUN 21...	1300	1.8	23	6.9	6.9	15.5	1.3	.4
01665730 - CEDAR RUN NR SYRIA, VA (LAT 38 32 22 LONG 078 21 01)								
JAN , 1982 25...	1330	2.2	25	6.8	6.7	2.0	1.8	.9
MAR 15...	1450	18	24	6.2	6.8	5.0	1.9	.9
MAY 17...	1200	1.4	31	6.8	6.7	14.0	2.3	1.1
JUN 21...	1130	8.3	27	6.8	6.8	15.5	2.0	.9
01665800 - ROSE RIVER NR SYRIA, VA (LAT 38 30 55 LONG 078 21 59)								
JAN , 1982 25...	1130	8.1	24	7.0	6.8	.0	1.8	.8
MAR 15...	1140	35	23	7.0	6.9	5.0	1.8	.9
MAY 17...	1030	7.9	26	7.2	7.2	14.5	2.1	.9
JUN 21...	1020	22	23	7.1	7.1	14.5	2.0	.9
JAMES RIVER BASIN								
02031400 - N FK MOORMANS RIVER NR BROWNS COVE, VA (LAT 38 11 42 LONG 078 43 57)								
MAR , 1982 17...	1500	9.4	29	6.7	6.9	12.0	2.0	1.1
MAY 19...	0945	1.4	32	7.0	7.1	14.5	2.3	1.3
JUN 23...	1015	3.2	30	7.1	7.1	14.0	2.3	1.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
RAPPAHANNOCK RIVER BASIN--CONTINUED								
01665440 - SOUTH RIVER NR MCMULLEN, VA (LAT 38 22 01 LONG 078 27 38)								
JAN , 1982 26...	1.3	.2	6.3	3.5	1.0	8.8	.46	<.010
MAR 18...	1.5	.2	5.8	4.4	1.0	8.6	.53	<.010
MAY 18...	1.6	.2	9.0	2.8	1.1	9.8	.22	.010
JUN 22...	1.2	.1	8.4	2.9	.8	9.5	.23	.020
01665710 - WHITE OAK CANYON TRIB NR SYRIA, VA (LAT 38 32 23 LONG 078 20 53)								
JAN , 1982 25...	1.0	.2	4.7	2.8	1.1	7.2	.23	.010
MAR 15...	1.1	.2	5.2	2.9	1.1	7.5	.18	<.010
MAY 17...	1.2	.2	7.5	2.3	1.2	8.1	.13	.010
JUN 21...	1.2	.2	6.9	2.1	1.0	7.8	.09	<.010
01665720 - BERRY HOLLOW TRIB NR NETHERS, VA (LAT 38 32 45 LONG 078 20 37)								
JAN , 1982 25...	2.1	.6	4.5	3.5	1.0	11	.05	<.010
MAR 15...	1.9	.6	4.1	3.5	1.0	9.6	.07	<.010
MAY 17...	2.0	.6	5.6	2.7	1.5	11	.06	.010
JUN 21...	2.0	.6	5.2	3.0	1.0	11	.04	<.010
01665730 - CEDAR RUN NR SYRIA, VA (LAT 38 32 22 LONG 078 21 01)								
JAN , 1982 25...	1.1	.1	4.6	3.0	1.2	7.7	.26	<.010
MAR 15...	1.2	.1	4.9	3.4	1.1	7.9	.21	<.010
MAY 17...	1.7	.2	8.1	2.8	1.3	8.8	.14	.010
JUN 21...	1.2	.2	7.0	2.8	1.1	8.3	.10	.010
01665800 - ROSE RIVER NR SYRIA, VA (LAT 38 30 55 LONG 078 21 59)								
JAN , 1982 25...	1.2	.2	5.4	2.9	1.1	8.1	.26	.010
MAR 15...	1.2	.2	5.4	3.0	1.0	7.9	.24	<.010
MAY 17...	1.3	.2	7.7	2.5	1.1	8.8	.13	.020
JUN 21...	1.3	.2	7.3	2.3	1.0	8.9	.10	<.010
JAMES RIVER BASIN--CONTINUED								
02031400 - N FK MOORMANS RIVER NR BROWNS COVE, VA (LAT 38 11 42 LONG 078 43 57)								
MAR , 1982 17...	1.6	.4	6.0	4.1	1.0	9.7	.35	<.010
MAY 19...	2.2	.5	9.9	2.9	1.0	10	.17	.010
JUN 23...	1.7	.4	9.4	2.6	.8	11	.18	.010

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

JAMES RIVER BASIN--CONTINUED

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
02031410 - N FK MOORMANS RIVER TRIB NR HARRISTON, VA (LAT 38 12 33 LONG 078 44 52)								
MAR , 1982								
17...	1700	.48	14	5.5	6.0	10.0	.4	.3
MAY								
19...	1110	.17	13	6.6	6.2	12.0	.6	.3
JUN								
23...	1145	.24	15	6.2	6.1	12.0	.4	.2
02031420 - N FK MOORMANS RIVER TRIB NR BROWNS COVE, VA (LAT 38 11 50 LONG 078 44 32)								
MAR , 1982								
17...	1540	2.8	15	6.3	6.2	11.0	.5	.4
MAY								
19...	1030	.41	16	6.3	6.3	14.0	.5	.5
JUN								
23...	1100	.47	16	6.2	6.1	13.0	.4	.4
02031430 - N FK MOORMANS RIVER AB BIG BR NR BROWNS COVE, VA (LAT 38 10 12 LONG 078 44 30)								
MAR , 1982								
17...	1450	23	26	6.9	6.9	11.0	1.6	1.0
MAY								
19...	1230	4.2	29	7.0	7.2	15.0	2.0	1.2
JUN								
23...	0900	6.6	28	7.1	7.2	14.0	2.0	1.1
02031440 - N FK MOORMANS RIVER BL BIG BR NR WHITEHALL, VA (LAT 38 09 23 LONG 078 44 56)								
MAR , 1982								
17...	1245	26	26	6.8	6.9	11.0	1.6	1.0
MAY								
19...	0830	6.8	30	7.0	7.1	15.0	2.0	1.2
JUN								
23...	0745	9.8	28	6.9	7.1	14.0	1.9	1.1
02031500 - NORTH FORK MOORMANS RIVER NR WHITEHALL VA (LAT 38 08 25 LONG 078 45 05)								
JAN , 1982								
28...	1230	7.2	26	7.1	6.8	4.5	1.6	1.0
MAR								
17...	1000	41	24	6.6	6.8	8.0	1.7	1.0
MAY								
19...	1410	6.4	35	7.0	7.3	16.0	2.5	1.5
JUN								
23...	1420	11	28	7.2	7.2	16.0	1.8	1.1
02031800 - S FK MOORMANS RIVER NR WHITEHALL, VA (LAT 38 08 13 LONG 078 44 59)								
JAN , 1982								
28...	1110	2.8	31	7.2	7.0	5.5	2.0	1.2
MAR								
17...	0945	18	30	6.9	7.0	10.0	2.0	1.2
MAY								
19...	1320	2.7	31	7.0	7.2	16.0	1.9	1.2
JUN								
23...	1345	5.8	34	7.3	7.3	15.0	2.4	1.3

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
JAMES RIVER BASIN--CONTINUED								
02031410 - N FK MOORMANS RIVER TRIB NR HARRISTON, VA (LAT 38 12 33 LONG 078 44 52)								
MAR , 1982 17...	.5	1.3	.70	2.6	.6	4.0	.05	<.010
MAY 19...	.4	1.2	1.3	2.1	.7	3.8	.04	.010
JUN 23...	.4	1.2	1.3	1.6	.6	3.7	.02	<.010
02031420 - N FK MOORMANS RIVER TRIB NR BROWNS COVE, VA (LAT 38 11 50 LONG 078 44 32)								
MAR , 1982 17...	.5	1.1	.90	3.1	.7	4.4	.02	<.010
MAY 19...	.6	1.2	1.3	2.7	.8	4.3	.03	.010
JUN 23...	.5	1.3	1.1	2.3	.7	4.0	.02	<.010
02031430 - N FK MOORMANS RIVER AB BIG BR NR BROWNS COVE, VA (LAT 38 10 12 LONG 078 44 30)								
MAR , 1982 17...	1.4	.5	5.1	4.1	.9	8.7	.19	<.010
MAY 19...	1.9	.6	8.8	2.9	1.0	9.4	.08	.020
JUN 23...	1.6	.5	8.8	3.3	.9	10	.10	<.010
02031440 - N FK MOORMANS RIVER BL BIG BR NR WHITEHALL, VA (LAT 38 09 23 LONG 078 44 56)								
MAR , 1982 17...	1.3	.6	4.6	4.2	.9	8.3	.15	<.010
MAY 19...	1.5	.6	8.5	2.9	1.0	8.8	.09	.010
JUN 23...	1.6	.6	8.3	2.7	.9	10	.08	<.010
02031500 - NORTH FORK MOORMANS RIVER NR WHITEHALL VA (LAT 38 08 25 LONG 078 45 05)								
JAN , 1982 28...	1.1	.5	4.8	4.4	1.0	7.5	.08	<.010
MAR 17...	1.3	.6	4.5	4.6	1.0	8.4	.14	<.010
MAY 19...	1.7	.4	11	2.7	1.2	12	.07	.020
JUN 23...	1.5	.6	7.9	3.2	.9	9.9	.04	.010
02031800 - S FK MOORMANS RIVER NR WHITEHALL, VA (LAT 38 08 13 LONG 078 44 59)								
JAN , 1982 28...	1.4	.4	7.3	4.0	1.2	9.4	.05	<.010
MAR 17...	1.4	.4	7.0	4.4	1.2	10	.09	<.010
MAY 19...	1.5	.6	8.0	3.2	1.0	8.7	.07	.010
JUN 23...	1.8	.4	11	2.9	1.1	13	.05	<.010

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

JAMES RIVER BASIN--CONTINUED

02032100 - MOORMANS RIVER AT RT 614 NR WHITEHALL, VA (LAT 38 07 45 LONG 078 43 27)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 28...	1250	5.8	31	7.1	6.9	2.5	2.1	1.2
MAR 17...	0810	58	29	6.9	6.9	8.5	2.0	1.1
MAY 19...	1500	2.1	39	6.8	6.9	18.0	2.6	1.4
JUN 23...	1500	13	33	7.1	7.1	19.5	2.4	1.3

02032110 - DOYLES RIVER NR BROWNS COVE, VA (LAT 38 12 28 LONG 078 40 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1615	4.2	34	7.2	7.0	2.0	2.3	1.3
MAR 19...	0820	23	35	7.0	7.0	8.0	2.4	1.4
MAY 18...	1405	2.9	38	7.0	7.2	17.0	2.6	1.4
JUN 25...	1230	5.4	36	7.4	7.3	16.0	2.8	1.4

02032310 - MUDDY RUN TRIB NEAR BOONESVILLE, VA (LAT 38 14 02 LONG 078 37 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1530	2.2	35	7.1	6.9	3.0	2.4	1.3
MAR 19...	0920	8.5	34	6.3	6.9	8.5	2.6	1.3
MAY 18...	1320	1.4	38	7.0	7.3	18.0	2.9	1.4
JUN 25...	1120	2.2	39	7.6	7.2	17.0	3.1	1.5

02032545 - IVY CREEK NR BOONESVILLE, VA (LAT 38 16 07 LONG 078 36 45)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 26...	1450	3.9	35	7.0	6.8	2.5	2.4	1.3
MAR 19...	1015	18	32	6.3	6.9	9.5	2.4	1.3
MAY 18...	1500	1.8	37	7.1	7.2	18.0	2.7	1.4
JUN 25...	1035	3.4	37	7.0	7.0	16.5	2.7	1.4

02032589 - SWIFT RUN AT LYDIA, VA (LAT 38 20 31 LONG 078 30 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	PH LAB (UNITS)	TEMPER-ATURE (DEG C)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN , 1982 25...	1700	4.1	57	7.0	7.0	2.5	4.1	1.5
MAR 18...	1530	15	47	6.6	7.0	9.0	3.3	1.2
MAY 21...	1100	4.2	55	7.0	7.2	13.5	4.0	1.4
JUN 25...	0910	6.1	49	7.3	7.2	13.5	3.7	1.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

JAMES RIVER BASIN--CONTINUED

02032100 - MOORMANS RIVER AT RT 614 NR WHITEHALL, VA (LAT 38 07 45 LONG 078 43 27)

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
JAN , 1982 28...	1.4	.4	6.9	4.5	1.2	8.2	.06	<.010
MAR 17...	1.4	.5	6.0	4.6	1.1	8.4	.08	<.010
MAY 19...	1.8	.6	11	3.9	1.2	10	.02	.010
JUN 23...	1.6	.5	9.7	3.9	1.1	10	<.01	<.010

02032110 - DOYLES RIVER NR BROWNS COVE, VA (LAT 38 12 28 LONG 078 40 30)

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
JAN , 1982 26...	1.8	.3	7.5	4.7	1.2	9.7	.37	<.010
MAR 19...	1.8	.3	7.5	4.9	1.1	12	.47	<.010
MAY 18...	2.2	.3	11	3.7	1.3	13	.14	.020
JUN 25...	2.1	.4	12	3.7	1.0	13	.15	<.010

02032310 - MUDDY RUN TRIB NEAR BOONESVILLE, VA (LAT 38 14 02 LONG 078 37 08)

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
JAN , 1982 26...	2.0	.2	6.3	4.7	1.6	9.7	.55	<.010
MAR 19...	1.8	.2	6.3	5.3	1.1	10	.59	<.010
MAY 18...	2.0	.3	11	4.4	1.2	12	.09	.020
JUN 25...	2.1	.3	11	4.2	1.2	12	.21	<.010

02032545 - IVY CREEK NR BOONESVILLE, VA (LAT 38 16 07 LONG 078 36 45)

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
JAN , 1982 26...	1.6	.3	5.8	5.4	1.2	9.0	.45	<.010
MAR 19...	1.6	.4	6.0	5.7	1.1	9.7	.41	<.010
MAY 18...	2.0	.4	9.8	4.6	1.1	11	.19	.010
JUN 25...	2.0	.4	11	4.7	1.1	11	.12	<.010

02032589 - SWIFT RUN AT LYDIA, VA (LAT 38 20 31 LONG 078 30 40)

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
JAN , 1982 25...	4.0	.3	8.1	3.3	8.0	10	.32	<.010
MAR 18...	3.5	.3	7.1	4.0	5.8	9.7	.34	<.010
MAY 21...	3.9	.3	10	3.1	5.4	11	.01	.020
JUN 25...	3.3	.3	12	2.8	4.7	11	.13	<.010

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
BIG SANDY RIVER BASIN											
370441082014801 - COON FLAT BRANCH NEAR COUNCIL, VA. (LAT 37 04 41 LONG 082 01 48)											
AUG , 1982											
24...	1500	.03	370	7.2	19.5	4.8	150	80	35	14	8.1
370438082034701 - RUSSELL FORK ABOVE BALL CREEK AT COUNCIL, VA. (LAT 37 04 38 LONG 082 03 47)											
AUG , 1982											
25...	1430	.52	132	6.9	20.5	8.5	48	8.0	12	4.3	7.2
370436082013901 - BARTON FORK ABOVE JACKSON FK NR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 39)											
AUG , 1982											
24...	1530	.04	434	7.1	20.5	5.9	190	120	45	19	17
370436082014101 - JACKSON FORK ABOVE BARTON FORK NEAR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 41)											
AUG , 1982											
24...	1600	.06	286	7.6	22.0	7.8	110	61	26	12	6.7
370615082030001 - GRISSOM CREEK TRIB NR COUNCIL, VA. (LAT 37 06 15 LONG 082 03 00)											
AUG , 1982											
24...	1115	.11	98	6.7	24.0	5.3	43	4.0	9.9	4.4	3.1
370434082021001 - BARTON FK TRIB NR COUNCIL, VA (LAT 37 04 34 LONG 082 02 10)											
AUG , 1982											
24...	1430	.01	423	7.9	17.5	7.9	150	35	36	14	27
03208039 - BALL CREEK NEAR COUNCIL, VA. (LAT 37 04 40 LONG 082 03 45)											
AUG , 1982											
26...	1100	2.3	278	7.4	20.0	8.3	120	53	26	13	7.4
370512082020501 - BALL CK AB NANCE WHITE CK NR COUNCIL, VA (LAT 37 05 12 LONG 082 02 05)											
AUG , 1982											
24...	1245	.28	580	7.8	20.0	8.4	290	220	61	33	8.5
370513082020701 - NANCE WHITE BRANCH NR COUNCIL, VA (LAT 37 05 13 LONG 082 02 07)											
AUG , 1982											
24...	1215	.11	243	7.5	21.0	6.8	100	4.0	24	10	9.3
370612082030201 - GRISSON CREEK AB VENIA NR COUNCIL, VA (LAT 37 06 12 LONG 082 03 02)											
AUG , 1982											
24...	1145	.10	225	7.5	20.0	10.7	110	.00	27	10	8.2

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
BIG SANDY RIVER BASIN--CONTINUED											
370441082014801 - COON FLAT BRANCH NEAR COUNCIL, VA. (LAT 37 04 41 LONG 082 01 48)											
AUG , 1982 24...	2.6	65	97	1.2	8.5	222	100	560	3	40	25
370438082034701 - RUSSELL FORK ABOVE BALL CREEK AT COUNCIL, VA. (LAT 37 04 38 LONG 082 03 47)											
AUG , 1982 25...	2.0	40	14	8.9	5.9	88	<100	1700	70	310	17
370436082013901 - BARTON FORK ABOVE JACKSON FK NR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 39)											
AUG , 1982 24...	3.0	74	150	1.3	9.1	270	<100	1200	440	590	520
370436082014101 - JACKSON FORK ABOVE BARTON FORK NEAR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 41)											
AUG , 1982 24...	2.5	53	71	5.1	7.7	155	100	390	3	100	52
370615082030001 - GRISSOM CREEK TRIB NR COUNCIL, VA. (LAT 37 06 15 LONG 082 03 00)											
AUG , 1982 24...	2.5	39	10	2.5	7.9	52	<100	270	260	80	66
370434082021001 - BARTON FK TRIB NR COUNCIL, VA (LAT 37 04 34 LONG 082 02 10)											
AUG , 1982 24...	2.8	113	32	37	6.8	252	<100	350	<10	10	1
03208039 - BALL CREEK NEAR COUNCIL, VA. (LAT 37 04 40 LONG 082 03 45)											
AUG , 1982 26...	2.6	65	61	5.6	7.4	169	<100	460	53	50	31
370512082020501 - BALL CK AB NANCE WHITE CK NR COUNCIL, VA (LAT 37 05 12 LONG 082 02 05)											
AUG , 1982 24...	3.1	65	200	4.1	7.1	430	100	530	23	30	15
370513082020701 - NANCE WHITE BRANCH NR COUNCIL, VA (LAT 37 05 13 LONG 082 02 07)											
AUG , 1982 24...	2.5	97	15	9.0	7.5	138	<100	1800	190	150	110
370612082030201 - GRISSON CREEK AB VENIA NR COUNCIL, VA (LAT 37 06 12 LONG 082 03 02)											
AUG , 1982 24...	2.5	110	8.0	9.2	8.3	167	<100	920	150	110	87

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
BIG SANDY RIVER BASIN--CONTINUED											
370456082050301 - BIG BRANCH NEAR COUNCIL, VA. (LAT 37 04 56 LONG 082 05 03)											
AUG , 1982 25...	1300	.98	137	6.5	21.5	8.2	53	25	11	6.3	3.6
370758082042501 - HURRICANE CR ABOVE LEFT FORK NEAR DAVENPORT, VA. (LAT 37 07 58 LONG 082 04 25)											
AUG , 1982 25...	1115	2.0	167	6.4	19.0	7.2	68	34	15	7.5	4.1
370801082043101 - LEFT FORK ABOVE HURRICANE CK NR DAVENPORT (LAT 37 08 01 LONG 082 04 31)											
AUG , 1982 25...	1145	4.5	133	6.5	19.5	8.2	51	13	12	5.1	3.7
370729082044901 - PARETT FLETCHER BR NR DAVENPORT, VA (LAT 37 07 29 LONG 082 04 49)											
AUG , 1982 25...	1045	1.3	349	6.4	19.5	8.0	150	120	33	17	6.3
370846082062901 - L FK HURRICANE CK AB NEW CAMP BR NR DAVENPORT VA (LAT 37 08 46 LONG 082 06 29)											
AUG , 1982 26...	0915	.50	465	7.1	17.5	9.0	220	150	47	24	5.7
370754082070001 - BOYD BR NR DAVENPORT, VA (LAT 37 07 54 LONG 082 07 00)											
AUG , 1982 26...	1000	.09	165	6.9	18.5	8.5	71	.00	16	7.6	4.0
370716082072501 - IVY LICK BR NR DAVENPORT, VA (LAT 37 07 16 LONG 082 07 25)											
AUG , 1982 26...	1030	.12	88	6.5	18.5	8.4	34	1.0	7.7	3.6	3.8
03208050 - HURRICANE CREEK AT DAVENPORT, VA. (LAT 37 06 05 LONG 082 08 12)											
AUG , 1982 25...	0915	13	175	6.7	20.0	7.8	72	18	17	7.1	5.6
370255082050301 - LITTLE INDIAN CK NR COUNCIL, VA (LAT 37 02 55 LONG 082 05 03)											
AUG , 1982 24...	1200	.80	172	7.9	19.0	7.5	70	1.0	18	6.2	3.9
370413082065401 - PUNCHEON CAMP BRANCH NEAR COUNCIL, VA. (LAT 37 04 13 LONG 082 06 54)											
AUG , 1982 24...	1245	.02	600	8.0	21.0	6.4	190	64	42	20	63

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
BIG SANDY RIVER BASIN--CONTINUED											
370456082050301 - BIG BRANCH NEAR COUNCIL, VA. (LAT 37 04 56 LONG 082 05 03)											
AUG , 1982 25...	3.9	28	35	2.9	7.5	99	100	3800	[illegible]	200	32
370758082042501 - HURRICANE CR ABOVE LEFT FORK NEAR DAVENPORT, VA. (LAT 37 07 58 LONG 082 04 25)											
AUG , 1982 25...	1.9	34	40	3.1	7.9	100	<100	2700	100	120	64
370801082043101 - LEFT FORK ABOVE HURRICANE CK NR DAVENPORT (LAT 37 08 01 LONG 082 04 31)											
AUG , 1982 25...	2.5	38	19	3.8	7.0	96	<100	4000	160	220	130
370729082044901 - PARETT FLETCHER BR NR DAVENPORT, VA (LAT 37 07 29 LONG 082 04 49)											
AUG , 1982 25...	2.8	29	130	2.1	9.3	238	100	13000	44	360	34
370846082062901 - L FK HURRICANE CK AB NEW CAMP BR NR DAVENPORT VA (LAT 37 08 46 LONG 082 06 29)											
AUG , 1982 26...	3.2	64	160	2.2	8.1	339	<100	3300	30	200	26
370754082070001 - BOYD BR NR DAVENPORT, VA (LAT 37 07 54 LONG 082 07 00)											
AUG , 1982 26...	2.7	72	10	3.6	8.1	103	<100	1300	100	70	25
370716082072501 - IVY LICK BR NR DAVENPORT, VA (LAT 37 07 16 LONG 082 07 25)											
AUG , 1982 26...	2.2	33	8.0	2.7	8.7	59	200	460	46	50	33
03208050 - HURRICANE CREEK AT DAVENPORT, VA. (LAT 37 06 05 LONG 082 08 12)											
AUG , 1982 25...	2.7	54	29	5.1	4.7	111	200	22000	67	530	10
370255082050301 - LITTLE INDIAN CK NR COUNCIL, VA (LAT 37 02 55 LONG 082 05 03)											
AUG , 1982 24...	2.2	69	6.0	5.8	8.7	94	<100	1000	64	60	12
370413082065401 - PUNCHEON CAMP BRANCH NEAR COUNCIL, VA. (LAT 37 04 13 LONG 082 06 54)											
AUG , 1982 24...	2.2	123	160	22	9.8	416	<100	350	10	140	96

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
BIG SANDY RIVER BASIN--CONTINUED											
370455082083201 - INDIAN CK TRIB NO 2 NR DUTY, VA (LAT 37 04 55 LONG 082 08 32)											
AUG , 1982 24...	1355	.10	1340	7.4	20.0	7.7	740	720	140	95	15
370409082093701 - CANE CR AB TILLER FK NR DUTY, VA (LAT 37 04 09 LONG 082 09 37)											
AUG , 1982 25...	0955	1.3	245	7.8	20.0	8.2	100	.00	25	9.4	8.3
370400082092301 - TILLER FORK AB LEFT FK NR DUTY, VA (LAT 37 04 00 LONG 082 09 23)											
AUG , 1982 24...	1440	.29	1230	8.4	22.0	7.6	250	.00	53	29	170
370401082092001 - LEFT FORK ABV TILLER FORK NEAR DUTY, VA. (LAT 37 04 01 LONG 082 09 20)											
AUG , 1982 24...	1515	.14	420	7.9	23.0	7.0	180	140	34	22	13
370418082094301 - CANE CR TRIB NO. 3 AT TILLER CEM NR DUTY, VA. (LAT 37 04 18 LONG 082 09 43)											
AUG , 1982 24...	1600	.20	310	7.9	23.0	7.2	130	59	28	15	5.0
03208070 - INDIAN CREEK NEAR DAVENPORT, VA. (LAT 37 06 35 LONG 082 09 30)											
AUG , 1982 26...	1145	8.2	500	8.3	19.0	8.4	120	1.0	28	13	50
370646082100301 - BIG BRANCH NR MURPHY, VA (LAT 37 06 46 LONG 082 10 03)											
AUG , 1982 26...	1115	.57	53	7.2	17.0	8.6	18	3.0	4.1	1.9	2.2
370654082102001 - ABNER BR AT MOUTH NR MURPHY, VA (LAT 37 06 54 LONG 082 10 20)											
AUG , 1982 26...	1050	.59	128	7.4	18.0	7.8	46	2.0	11	4.6	5.0
370943082102101 - FOX CK AB LEFT FORT NR MURPHY, VA (LAT 37 09 43 LONG 082 10 21)											
AUG , 1982 25...	1140	8.3	270	7.6	20.5	8.4	110	69	26	12	3.5
370946082102301 - LF FK NR MURPHY, VA (LAT 37 09 46 LONG 082 10 23)											
AUG , 1982 25...	1215	3.7	101	7.0	19.0	8.4	38	21	7.8	4.4	2.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
BIG SANDY RIVER BASIN--CONTINUED											
370455082083201 - INDIAN CK TRIB NO 2 NR DUTY, VA (LAT 37 04 55 LONG 082 08 32)											
AUG , 1982											
24...	5.2	18	770	1.3	16	1200	<100	1400	34	1900	2000
370409082093701 - CANE CR AB TILLER FK NR DUTY, VA (LAT 37 04 09 LONG 082 09 37)											
AUG , 1982											
25...	2.1	102	33	1.9	5.9	139	200	73000	200	1600	22
370400082092301 - TILLER FORK AB LEFT FK NR DUTY, VA (LAT 37 04 00 LONG 082 09 23)											
AUG , 1982											
24...	3.4	280	350	15	7.0	842	200	390	11	110	110
370401082092001 - LEFT FORK ABV TILLER FORK NEAR DUTY, VA. (LAT 37 04 01 LONG 082 09 20)											
AUG , 1982											
24...	2.5	40	160	1.0	9.6	316	100	380	83	70	58
370418082094301 - CANE CR TRIB NO. 3 AT TILLER CEM NR DUTY, VA. (LAT 37 04 18 LONG 082 09 43)											
AUG , 1982											
24...	3.3	73	73	2.8	8.1	220	100	360	98	590	550
03208070 - INDIAN CREEK NEAR DAVENPORT, VA. (LAT 37 06 35 LONG 082 09 30)											
AUG , 1982											
26...	2.7	122	120	4.4	8.2	306	200	1400	56	80	32
370646082100301 - BIG BRANCH NR MURPHY, VA (LAT 37 06 46 LONG 082 10 03)											
AUG , 1982											
26...	1.3	15	8.0	.8	9.1	34	100	1900	99	30	10
370654082102001 - ABNER BR AT MOUTH NR MURPHY, VA (LAT 37 06 54 LONG 082 10 20)											
AUG , 1982											
26...	2.1	44	12	4.3	8.7	92	100	1900	770	140	120
370943082102101 - FOX CK AB LEFT FORT NR MURPHY, VA (LAT 37 09 43 LONG 082 10 21)											
AUG , 1982											
25...	2.6	45	83	1.1	6.8	183	100	16000	220	450	53
370946082102301 - LF FK NR MURPHY, VA (LAT 37 09 46 LONG 082 10 23)											
AUG , 1982											
25...	1.8	17	26	.7	8.5	69	100	3100	250	100	29

< Actual value is known to be less than the value shown.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
BIG SANDY RIVER BASIN--CONTINUED											
371005082115801 - PAWPAW CK AB HACKNEY HOLLOW NR PRATER, VA (LAT 37 10 05 LONG 082 11 58)											
AUG , 1982											
25...	1310	9.3	57	7.0	20.0	9.4	21	4.0	5.1	2.0	2.6
03208088 - PAWPAW CREEK TRIBUTARY NR COLLEY,VA. (LAT 37 10 06 LONG 082 12 02)											
AUG , 1982											
25...	1340	5.5	53	7.0	21.5	9.6	18	4.0	4.2	1.9	2.6
03208089 - LITTLE PAWPAW CREEK NEAR COLLEY, VA. (LAT 37 10 00 LONG 082 12 17)											
AUG , 1982											
25...	1410	.10	228	7.8	23.0	7.4	96	46	22	10	5.4
371016082141201 - LAUREL BR (NORTH) AT VIERS NR COLLEY, VA (LAT 37 10 16 LONG 082 14 12)											
AUG , 1982											
25...	1450	.91	205	8.0	23.0	7.6	85	28	22	7.3	5.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
BIG SANDY RIVER BASIN--CONTINUED											
371005082115801 - PAWPAW CK AB HACKNEY HOLLOW NR PRATER, VA (LAT 37 10 05 LONG 082 11 58)											
AUG , 1982											
25...	1.5	17	8.0	.7	7.3	--	200	6300	150	140	22
03208088 - PAWPAW CREEK TRIBUTARY NR COLLEY,VA. (LAT 37 10 06 LONG 082 12 02)											
AUG , 1982											
25...	1.4	14	10	.9	8.4	58	200	2100	120	70	24
03208089 - LITTLE PAWPAW CREEK NEAR COLLEY, VA. (LAT 37 10 00 LONG 082 12 17)											
AUG , 1982											
25...	2.6	50	51	3.8	7.5	159	<100	4500	96	130	31
371016082141201 - LAUREL BR (NORTH) AT VIERS NR COLLEY, VA (LAT 37 10 16 LONG 082 14 12)											
AUG , 1982											
25...	2.7	57	33	7.0	7.3	156	200	2700	62	60	16

< Actual value is known to be less than the value shown.

ACCOMACK COUNTY

375622075280101 (revised). Local number, 67M2.
LOCATION.--Lat 37°56'23", long 75°28'02", Hydrologic Unit 02060010, Wallops Flight Center well B31. Owner: National Aeronautics and Space Administration (formerly U.S. Naval Air Station, Wallops Island).
AQUIFER.--Columbia group sand of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 60 ft (18.3 m), screen depth unknown.
DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.38 ft (0.42 m) above land-surface datum. Measuring point reported as 6.09 ft (1.86 m) above land-surface datum from 1963 to 1975.
REMARKS.--Records furnished by the National Aeronautics and Space Administration.
PERIOD OF RECORD.--May 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.82 ft (5.43 m) below land-surface datum, May 9, 1963; lowest measured, 25.22 ft (7.69 m) below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	24.82	JAN 4	24.92	APR 1	24.22	JUL 1	24.12
NOV 2	25.02	FEB 1	25.02	MAY 3	23.82	AUG 3	24.02
DEC 1	25.22	MAR 1	24.92	JUN 1	23.92	SEP 1	24.32

ALBEMARLE COUNTY

380333078264801. Local number, 43N1.
LOCATION.--Lat 38°03'33", long 78°26'48", Hydrologic Unit 02080204, at Key West Subdivision, Charlottesville. Owner: Key West Development Corporation.
AQUIFER.--Lynchburg formation of Precambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 409 ft (124.7 m), cased to 52 ft (15.8 m), open hole 52 to 409 ft (15.8 to 124.7 m).
DATUM.--Altitude of land-surface datum is 345 ft (105 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft (0.1 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 28. Manual measurements published from June 1974 to April 1981.
PERIOD OF RECORD.--February 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.58 ft (3.53 m) below land-surface datum, May 31, 1971; lowest measured, 22.10 ft (6.74 m) below land-surface datum, Nov. 30, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1980 TO APRIL 1981

MANUAL MEASUREMENTS

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	19.99	JAN 9	20.95	APR 10	20.68	APR 30	20.93
NOV 20	19.92	FEB 23	20.43	APR 21	21.11		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MAY TO SEPTEMBER 1981

LOWEST RECORDED VALUES

DAY	MAY	JUN	JUL	AUG	SEP
5	20.88	20.60	20.52	20.50	21.31
10	20.80	20.14	20.39	20.70	21.46
15	20.82	20.10	20.28	20.66	21.30
20	21.09	20.07	20.20	20.90	20.90
25	21.20	20.10	20.25	20.99	21.16
EOM	20.96	20.26	20.58	21.20	21.41

WTR YR 1981 HIGHEST MEASURED 19.92 NOV 20, 1980
LOWEST RECORDED 21.49 SEP 11, 12, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.51	-	21.80	20.85	17.90	17.70	16.42	16.66	16.00	-	16.39	16.45
10	21.72	-	21.83	20.20	18.14	17.40	16.64	16.90	-	-	16.41	16.56
15	-	21.72	21.97	20.00	18.42	17.35	16.80	17.20	13.23	16.16	16.45	16.60
20	-	21.80	21.75	19.99	17.22	17.34	16.79	17.42	14.32	16.18	16.39	16.71
25	-	21.96	21.71	19.68	17.62	15.78	16.78	17.26	15.65	16.22	16.30	16.80
EOM	-	22.10	21.70	19.61	17.74	16.40	16.65	15.51	-	16.28	16.45	16.71

WTR YR 1982 HIGHEST 13.13 JUN 15, 1982 LOWEST 22.10 NOV 30, 1981

APPOMATTOX COUNTY

372133078493701. Local number, 40G1.
LOCATION.--Lat 37°21'33", long 78°49'37", Hydrologic Unit 02080207, in the town of Appomattox. Owner: Town of Appomattox.
AQUIFER.--Metamorphic rock of uncertain age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 288 ft (87.8 m), cased to 40 ft (12.2 m), open hole 40 to 288 ft (12.2 to 87.8 m).
DATUM.--Altitude of land-surface datum is 860 ft (262 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 12.
PERIOD OF RECORD.--October 1967 to current year. Unpublished record available in May 1949.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.78 ft (10.60 m) below land-surface datum, June 13, 1973; lowest recorded, 58.21 ft (17.74 m) below land-surface datum, Nov. 17, 18, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	46.63	47.52	49.37	50.16	50.10	50.25	52.71	53.25	52.89	55.30	56.42
10	45.80	47.00	47.52	49.63	50.04	50.32	54.38	52.18	53.20	-	55.80	56.29
15	46.03	47.00	47.52	50.17	49.85	50.17	52.95	52.79	53.23	-	55.84	56.20
20	46.03	47.32	47.87	49.67	49.94	50.43	52.22	52.73	53.18	-	56.34	56.00
25	45.80	47.38	47.75	49.57	50.20	50.80	52.42	52.47	53.43	-	56.23	56.42
EOM	46.56	47.40	48.47	50.39	50.14	50.48	52.62	52.58	53.47	56.50	56.10	56.30

WTR YR 1981 HIGHEST 45.23 OCT 11, 1980 LOWEST 56.61 AUG 27, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	56.80	56.78	57.33	56.72	56.45	55.72	55.15	-	53.64	53.11	52.77	53.03
10	57.40	57.51	57.24	56.50	56.57	55.50	55.54	-	53.67	53.22	52.60	53.23
15	57.30	58.12	57.06	56.92	56.20	55.30	55.34	-	53.60	53.08	52.73	53.30
20	57.23	58.20	56.88	56.80	56.12	55.16	55.10	-	53.20	52.98	52.89	52.91
25	56.97	57.43	56.56	56.42	56.04	55.85	55.08	-	53.48	52.68	52.90	53.30
EOM	56.92	57.15	56.52	56.37	55.63	55.30	-	53.68	53.68	52.91	53.10	53.49

WTR YR 1982 HIGHEST 51.50 AUG 9, 1982 LOWEST 58.21 NOV 17, 18, 1981

372514078394301. Local number, 41H2.
LOCATION.--Lat 37°25'14", long 78°39'43", Hydrologic Unit 02080207, 1 mi (1.6 km) south of intersection of State Highway 636 on the east side of State Highway 640. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 68 ft (20.7 m), 1.25 in (32 mm) 68 to 73 ft (20.7 to 22.3 m), depth 73 ft (22.3 m), screened 68 to 73 ft (20.7 to 22.3 m).
DATUM.--Altitude of land-surface datum is 640 ft (195 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 1.5 ft (0.5 m) above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.99 ft (10.06 m) below land-surface datum, May 20, 1973; lowest measured, 49.41 ft (15.06 m) below land-surface datum, Mar. 30, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	48.87	FEB 11	49.02	JUN 2	46.63	SEP 13	44.86
DEC 8	49.36	MAR 23	48.00	JUL 8	45.53		

ARLINGTON COUNTY

385346077073701. Local number, 53V1.
LOCATION.--Lat 38°53'46" (revised), long 77°07'37", Hydrologic Unit 02070010, at Langston School, 4854 Lee Highway, Arlington. Owner: Arlington County School Board.
AQUIFER.--Brandywine formation of Pleistocene age and Bryn Mawr (?) gravel of Pliocene (?) age, overlying the Sykesville formation of Precambrian age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 35 ft (10.7 m), terracotta casing.
DATUM.--Altitude of land-surface datum is 410 ft (125 m) National Geodetic Vertical Datum of 1929. Measuring point: Inner flange of manhole at land-surface datum.
PERIOD OF RECORD.--October 1931 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.74 ft (5.41 m) below land-surface datum, Apr. 20, 1935; lowest measured, 34.81 ft (10.61 m) below land-surface datum, Dec. 5, 1931.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 3	30.76	MAR 29	28.22	JUL 29	25.60	AUG 31	25.58

ARLINGTON COUNTY--Continued

385253077042301. Local number, 54V3.
LOCATION.--Lat 38°52'53", long 77°04'23", Hydrologic Unit 02070010, at Arlington National Cemetery. Owner: NPS National Capitol Parks.
AQUIFER.--Terrace gravels of Holocene age and sand of Early Cretaceous age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 48 in (1,200 mm), depth 50 ft (15.2 m).
DATUM.--Altitude of land-surface datum is 205 ft (62 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of brick and stone casing, 3 ft (0.9 m) above land-surface datum.
PERIOD OF RECORD.--January 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.34 ft (12.30 m) below land-surface datum, June 26, 1978; lowest measured, 44.90 ft (13.69 m) below land-surface datum, Mar. 4, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 3	44.07	MAR 29	43.38	JUL 29	41.93	AUG 31	41.93

BUCKINGHAM COUNTY

372541078392101. Local number, 41H1.
LOCATION.--Lat 37°25'41", long 78°39'21", Hydrologic Unit 02080207, 0.45 mi (0.72 km) southeast of State Highway 636. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 83 ft (25.3 m), diameter 1.25 in (32 mm) 83 to 88 ft (25.3 to 26.8 m), depth 88 ft (26.8 m), screened 83 to 88 ft (25.3 to 26.8 m).
DATUM.--Altitude of land-surface datum is 660 ft (201 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft (0.37 m) above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.95 ft (9.43 m) below land-surface datum, May 20, 1973; lowest measured, 50.41 ft (15.36 m) below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	50.01	FEB 11	49.98	JUN 2	46.22	SEP 13	44.85
DEC 8	50.41	MAR 23	48.66	JUL 8	45.05		

372608078404601. Local number, 41H3.
LOCATION.--Lat 37°26'08", long 78°40'46", Hydrologic Unit 02080207, 0.85 mi (1.4 km) west of Ranger Headquarters on south side of dirt road off of State Highway 636. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 49 ft (14.9 m), diameter 1.25 in (32 mm) 49 to 54 ft (14.9 to 16.5 m), depth 54 ft (16.5 m), screened 49 to 54 ft (14.9 to 16.5 m).
DATUM.--Altitude of land-surface datum is 683.8 ft (208.4 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.3 ft (0.4 m) above land-surface datum.
REMARKS.--Prior to Oct. 1, 1981, well was reported as being located in Appomattox County.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.31 ft (2.23 m) below land-surface datum, Apr. 12, 1973; lowest measured, 28.30 ft (8.62 m) below land-surface datum, Oct. 17, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	27.90	FEB 11	25.28	JUN 2	21.02	SEP 13	20.44
DEC 8	27.84	MAR 23	22.50	JUL 8	19.33		

372519078374001. Local number, 41H4.
LOCATION.--Lat 37°25'19", long 78°37'40", Hydrologic Unit 02080207, 0.65 mi (1.0 km) northeast of Holiday Creek and 0.85 mi (1.4 km) southeast of State Highway 636 on State Highway 614. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Plaeozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 72 ft (22 m), diameter 1.25 in (32 mm) 72 to 77 ft (22.0 to 23.5 m), depth 77 ft (23.5 m), screened 72 to 77 ft (22.0 to 23.5 m).
DATUM.--Altitude of land-surface datum is 647 ft (197 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.4 ft (0.43 m) above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.45 ft (8.67 m) below land-surface datum, May 1, 1980; lowest measured, 44.29 ft (13.50 m) below land-surface datum, Oct. 20, 21, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	42.31	FEB 11	40.93	JUN 2	37.19	SEP 13	38.75
DEC 8	42.70	MAR 23	39.15	JUL 8	36.56		

CITY OF COLONIAL HEIGHTS

371644077244601. Local number, 51G1.
LOCATION.--Lat 37°16'44", long 77°24'46", Hydrologic Unit 02080207, at Matoaka Manor, Colonial Heights. Owner: Kenneth Daul.
AQUIFER.--Petersburg granite of Late Paleozoic age.
WELL CHARACTERISTICS.--Drilled water well, diameter 6 in (150 mm), depth 100 ft (30.5 m), cased to 50 ft (15.2 m), open hole 50 to 100 ft (15.2 to 30.5 m).
DATUM.--Altitude of land-surface datum is 57.30 ft (17.47 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.
PERIOD OF RECORD.--October 1939 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft (3.27 m) below land-surface datum, Jan. 26, 1978; lowest measured, 19.26 ft (5.87 m) below land-surface datum, Dec. 3, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	17.64	DEC 29	18.03	FEB 24	15.07	APR 27	14.06	JUN 28	15.20	AUG 30	15.22
NOV 24	17.96	JAN 28	16.88	MAR 30	13.33	MAY 26	14.68	JUL 29	15.44	SEP 27	15.52

FAIRFAX COUNTY

384518077163501. Local number, 52U4.
LOCATION.--Lat 38°45'18", long 77°16'35", Hydrologic Unit 02070010, east of intersection of State Highways 641 and 643, Springfield. Owner: Sydenstricker Church.
AQUIFER.--Granite of undetermined age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 28 ft (8.5 m).
DATUM.--Altitude of land-surface datum is 340 ft (104 m) National Geodetic Vertical Datum of 1929. Measuring point: Hole in cement platform, 0.67 ft (0.20 m) above land-surface datum.
PERIOD OF RECORD.--May 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.54 ft (3.82 m) below land-surface datum, Apr. 30, 1973; lowest measured, 27.57 ft (8.40 m) below land-surface datum, Nov. 30, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	25.76	JAN 28	26.14	APR 27	21.60	JUL 29	20.44
NOV 27	26.05	FEB 25	24.88	MAY 28	21.31	AUG 31	21.09
DEC 29	26.29	MAR 29	23.60	JUN 28	20.19	SEP 29	22.13

385638077220101. Local number, 52V2.
LOCATION.--Lat 38°56'58", long 77°22'01", Hydrologic Unit 02070008, at U.S. Geological Survey, National Center, Reston. Owner: U.S. Geological Survey.
AQUIFER.--Manassas sandstone of Triassic age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 8 in (200 mm), depth 205 ft (62 m), cased to 35 ft (11 m), open hole 35 to 205 ft (11 to 62 m).
DATUM.--Altitude of land-surface datum is 390 ft (119 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.6 m) above land-surface datum.
PERIOD OF RECORD.--October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.48 ft (2.28 m) below land-surface datum, Apr. 30, May 1, 1980; lowest recorded, 17.30 ft (5.27 m) below land-surface datum, Oct. 24, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.74	15.70	15.78	14.54	12.49	11.53	9.56	-	10.96	12.25	-	15.53
10	16.03	15.82	15.82	14.38	12.80	-	9.45	-	9.97	-	-	15.75
15	16.17	15.77	15.75	-	12.68	-	9.74	10.93	8.32	-	-	16.01
20	16.34	15.75	15.38	-	11.84	-	9.94	11.55	9.88	-	-	16.21
25	16.37	15.88	15.22	-	11.24	9.57	-	11.88	11.04	-	-	15.98
EOM	15.85	15.93	15.13	-	11.40	10.11	-	11.14	11.63	-	-	15.84

WTR YR 1982 HIGHEST 8.27 JUN 15, 1982 LOWEST 16.37 OCT 22, 24, 25, 1981

CITY OF FRANKLIN

364047076552401. Local number, 55B22.
LOCATION.--Lat 36°40'47", long 76°55'24", Hydrologic Unit 03010202, at 5th Avenue and Middle Street, Franklin. Owner: City of Franklin.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Jetted observation water well, diameter 4 in (100 mm), depth 354 ft (107.9 m), screened 335 to 354 ft (102.1 to 107.9 m).
DATUM.--Altitude of land-surface datum is 21.24 ft (6.47 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of manhole at land-surface datum.
REMARKS.--Water level affected by local pumpage.
PERIOD OF RECORD.--June 1942 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.50 ft (4.42 m) below land-surface datum, June 25, 1942; lowest measured, 190.01 ft (57.92 m) below land-surface datum, June 12, 1981.

CITY OF FRANKLIN--Continued

364047076552401--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	181.76	FEB 19	177.11	MAY 20	177.67	SEP 16	178.86
NOV 13	181.65	MAR 19	176.82	JUL 15	183.80		
DEC 14	180.30	APR 22	179.06	AUG 16	180.42		

HALIFAX COUNTY

364550078562301. Local number, 39C1.
LOCATION.--Lat 36°45'50", long 78°56'23", Hydrologic Unit 03010105, in the town of Halifax. Owner: Town of Halifax.
AQUIFER.--Granite and gneiss of uncertain age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 302 ft (92.0 m), cased to 52 ft (15.8 m), open hole 52 to 302 ft (15.8 to 92.0 m).
DATUM.--Altitude of land-surface datum is 380 ft (116 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft (0.37 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 11.
PERIOD OF RECORD.--October 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.28 ft (11.06 m) below land-surface datum, June 8, 1980; lowest recorded, 45.09 ft (13.74 m) below land-surface datum, Dec. 30, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	37.47	37.72	38.12	38.52	38.86	38.96	39.27	39.42	39.72	39.90	40.22	40.57
10	37.45	37.88	38.18	38.56	38.89	39.10	39.34	39.47	39.75	40.00	40.30	40.61
15	37.57	37.85	38.22	38.57	38.87	39.13	39.40	39.50	39.80	40.07	40.31	40.61
20	37.60	38.02	38.40	38.58	38.69	39.17	39.33	39.60	39.80	40.10	40.40	40.69
25	37.57	38.10	38.40	38.70	38.93	39.27	39.40	39.64	39.87	40.17	40.42	40.77
EOM	37.72	38.14	38.34	38.80	38.98	39.27	39.38	39.70	39.90	40.23	40.51	40.78

WTR YR 1981 HIGHEST 37.27 OCT 1, 2, 1980 LOWEST 40.80 SEP 29, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	40.81	41.00	41.29	41.53	41.63	41.48	41.18	40.92	40.81	40.80	40.48	40.40
10	40.84	41.10	41.28	41.53	41.59	41.50	41.15	40.90	40.82	40.73	40.45	40.37
15	40.84	41.02	41.21	41.50	41.58	41.40	41.09	40.87	40.83	40.68	40.40	40.30
20	40.99	41.11	41.39	41.56	41.47	41.27	41.00	40.82	40.80	40.60	40.37	40.31
25	40.99	41.20	41.40	41.50	41.67	41.21	40.97	40.80	40.81	40.60	40.40	40.31
EOM	41.03	41.21	41.47	41.50	41.52	41.20	40.99	40.81	40.79	40.50	40.40	40.40

WTR YR 1982 HIGHEST 40.24 SEP 26, 1982 LOWEST 41.70 FEB 1, 2, 1982

CITY OF HOPEWELL

371801077164201. Local number, 52G1.
LOCATION.--Lat 37°18'01", long 77°16'42", Hydrologic Unit 02080206, in the city of Hopewell. Owner: Virginia American Water Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 300 ft (91.4 m), screen depth unknown.
DATUM.--Altitude of land-surface datum is 50.26 ft (15.32 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.34 ft (0.10 m) above land-surface datum.
PERIOD OF RECORD.--May 1939 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.56 ft (6.27 m) below land-surface datum, Sept. 7, 1979; lowest measured, 56.95 ft (17.36 m) below land-surface datum, Aug. 14, 1943.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	35.22	DEC 4	35.15	FEB 12	34.75	APR 16	35.30	JUN 18	35.11	AUG 20	33.81
9	35.21	11	35.19	19	31.55	23	35.36	25	35.14	27	34.73
16	35.26	18	35.17	26	32.30	30	35.31	JUL 2	35.19	SEP 3	35.17
23	35.31	25	35.16	MAR 5	32.75	MAY 7	35.28	9	35.16	10	35.18
30	35.31	JAN 1	34.84	12	33.22	14	35.19	16	35.20	17	35.19
NOV 6	35.31	15	35.31	19	32.11	21	35.14	23	35.21	24	35.17
13	35.22	22	35.58	26	33.48	28	35.09	30	35.25		
20	35.22	29	35.25	APR 2	34.99	JUN 4	35.05	AUG 6	35.31		
27	35.32	FEB 5	32.86	9	35.26	11	35.08	13	35.26		

ISLE OF WIGHT COUNTY

364059076544901. Local number, 55B16.

LOCATION.--Lat 36°40'59", long 76°54'49", Hydrologic Unit 03010202, at lumberyard well, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous aquifer.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 305 ft (93.0 m), screened 285 to 305 ft (86.9 to 93.0 m).

DATUM.--Altitude of land-surface datum is 25 ft (8 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.45 ft (0.10 m) above land-surface datum. Measuring point changed from top edge of recorder shelf, 3.50 ft (1.07 m) above land-surface datum Nov. 28, 1979.

REMARKS.--Water level affected by local pumpage.

PERIOD OF RECORD.--June 1960 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 99.00 ft (30.18 m) below land-surface datum, Dec. 27, 1960; lowest recorded, 195.67 ft (59.64 m) below land-surface datum, June 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	190.70	190.98	185.28	184.13	186.11	185.23	186.50	186.97	-	186.63	187.67	187.96
10	190.66	189.86	185.75	183.55	185.78	185.18	185.02	188.82	186.75	189.69	187.98	184.81
15	189.38	189.18	187.67	185.46	185.94	185.93	187.49	185.51	187.13	190.47	187.79	185.66
20	189.04	187.65	187.15	187.50	185.90	185.05	186.06	185.11	187.30	187.40	186.83	186.16
25	191.07	187.77	183.35	-	186.25	186.17	188.99	184.84	187.27	188.56	186.41	186.91
EOM	191.97	187.63	181.60	186.41	185.60	185.41	189.82	185.14	187.14	186.24	187.39	188.15

WTR YR 1982 HIGHEST 176.55 DEC 28, 1981 LOWEST 192.20 NOV 3, 4, 1981

364116076545001. Local number, 55B35.

LOCATION.--Lat 36°41'16", long 76°54'50", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in (100 mm), depth 623 ft (189.9 m), screened 430 to 435 ft (131.1 to 132.6 m), 475 to 480 ft (144.8 to 146.3 m), 580 to 585 ft (176.8 to 178.3 m), 618 to 623 ft (188.3 to 189.9 m).

DATUM.--Altitude of land-surface datum is 32 ft (10 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 2.15 ft (0.66 m) above land-surface datum. Measuring point changed from top of casing, 2 ft (0.61 m) above land-surface datum on Oct. 26, 1979.

REMARKS.--Water level affected by local pumpage. Recorder removed Nov. 14, 1971; manual measurements thereafter.

PERIOD OF RECORD.--February 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 154.99 ft (47.24 m) below land-surface datum, Aug. 23, 1974; lowest measured, 214.15 ft (65.27 m) below land-surface datum, June 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	207.64	FEB 19	202.96	MAY 20	203.29	AUG 16	206.87
NOV 13	208.10	MAR 19	202.75	JUN 21	205.27	SEP 16	205.20
DEC 14	205.84	APR 22	204.51	JUL 15	209.65		

364125076544801. Local number, 55B36.

LOCATION.--Lat 36°41'25", long 76°54'48", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in (100 mm), depth 860 ft (262.1 m), screened 720 to 725 ft (219.5 to 221.0 m), 800 to 805 ft (243.8 to 245.4 m), 855 to 860 ft (260.6 to 262.1 m).

DATUM.--Altitude of land-surface datum is 37 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.56 ft (1.39 m) above land-surface datum. Measuring point changed from 4.25 ft (1.30 m) above land-surface datum Oct. 25, 1979; published incorrectly as 4.25 ft (1.30 m) in 1980 and 1981.

REMARKS.--Water level affected by local pumpage.

PERIOD OF RECORD.--March 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 156.65 ft (47.75 m) below land-surface datum, Dec. 27, 1969; lowest measured, 219.29 ft (66.84 m) below land-surface datum, May 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	186.65	JAN 18	180.58	APR 22	183.44	JUL 15	183.84
NOV 13	184.19	FEB 19	182.33	MAY 20	183.38	AUG 16	186.02
DEC 14	183.07	MAR 19	182.68	JUN 21	183.24	SEP 16	185.79

ISLE OF WIGHT COUNTY--Continued

364425076532701. Local number, 55B45.
LOCATION.--Lat 36°44'25", long 76°53'27", Hydrologic Unit 03010202, near Maynards Crossroads. Owner: R. J. Goodrich.
AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 348 ft (106.1 m), screened 338 to 348 ft (103.0 to 106.1 m).
DATUM.--Altitude of land-surface datum is 37 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft (0.30 m) above land-surface datum. Measuring point changed from top edge of recorder shelf, 2.20 ft (0.67 m) above land-surface datum Apr. 13, 1981.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 33. Recorder removed Sept. 30, 1980; manual measurements thereafter.
PERIOD OF RECORD.--December 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 130.06 ft (39.64 m) below land-surface datum, Aug. 15, 1974; lowest measured, 167.00 ft (50.90 m) below land-surface datum, Aug. 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 19	161.43	FEB 28	162.74	MAY 19	161.30	AUG 31	160.59
DEC 27	156.06	MAR 31	162.82	JUL 28	160.52		

JAMES CITY COUNTY

371311076463601. Local number, 56F1.
LOCATION.--Lat 37°13'11", long 76°46'36", Hydrologic Unit 02080206, Colonial Parkway near Jamestown. Owner: U.S. Department of Interior. Colonial National Historical Park.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 346 ft (105.5 m), screened 336 to 346 ft (102.4 to 105.5 m).
DATUM.--Altitude of land-surface datum is 10 ft (3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.15 ft (0.96 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 18. Recorder removed Sept. 30, 1980; manual measurements thereafter.
PERIOD OF RECORD.--May 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.29 ft (13.19 m) below land-surface datum, May 8, 1969; lowest measured, 74.54 ft (22.72 m) below land-surface datum, Sept. 23, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	73.31	FEB 23	70.39	JUN 8	72.10	SEP 23	74.54
NOV 23	72.32	APR 28	70.40	JUL 15	72.95		
DEC 14	71.18	MAY 19	72.11	AUG 17	73.96		

KING AND QUEEN COUNTY

373126076454101. Local number, 56J11.
LOCATION.--Lat 37°31'26", long 76°45'41", Hydrologic Unit 02080105, at West Point airport. Owner: Chesapeake Corporation.
AQUIFER.--Sand gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 1,254 ft (382.2 m), screened 1,233 to 1,248 ft (375.8 to 380.4 m).
DATUM.--Altitude of land-surface datum is 15 ft (4.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft (0.2 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 73 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 3, 1975; manual measurements thereafter.
PERIOD OF RECORD.--October 1974 to current year. Unpublished records available in March 1962 and June 1972.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 73.08 ft (22.27 m) below land-surface datum, Apr. 25, 1975; lowest measured, 86.27 ft (26.30 m) below land-surface datum, Oct. 29, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	86.13	DEC 14	86.03	MAY 20	85.38	AUG 28	85.99
29	86.27	FEB 3	84.84	JUN 3	84.86		
NOV 20	86.09	MAR 22	84.95	JUL 29	85.59		
DEC 1	86.03	APR 19	85.36	AUG 16	85.84		

KING AND QUEEN COUNTY--Continued

373008076425601. Local number, 57J3.

LOCATION.--Lat 37°30'08", long 76°42'56", Hydrologic Unit 02080107, Gressitt observation well, near West Point. Owner: Chesapeake Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm) to 200 ft (61.0 m), diameter 4 in (100 mm) from 200 to 760 ft (61.0 to 231.6 m), depth 760 ft (231.6 m), screened 741 to 756 ft (225.9 to 230.4 m).

DATUM.--Altitude of land-surface datum is 51 ft (15.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft (0.06 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 74 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 10, 1976; manual measurements thereafter.

PERIOD OF RECORD.--November 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 109.90 ft (33.50 m) below land-surface datum, Jan. 26, 1975; lowest measured, 122.00 ft (37.19 m) below land-surface datum, Mar. 2, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	120.31	DEC 14	119.90	MAY 20	119.18	AUG 28	120.42
29	120.05	FEB 3	119.08	JUN 3	119.56		
NOV 20	120.02	MAR 22	119.46	JUL 29	115.27		
DEC 1	119.87	APR 19	119.71	AUG 16	120.07		

KING WILLIAM COUNTY

373238076481901. Local number, 56J1.

LOCATION.--Lat 37°32'38", long 76°48'19", Hydrologic Unit 02080106, in West Point, 0.1 mi (0.2 km) west of State Route 30. Owner: Chesapeake Corporation.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 4 in (100 mm), depth 851 ft (259.4 m), screened 390 to 400 ft (118.9 to 121.9 m), 547 to 557 ft (166.7 to 169.8 m), 640 to 650 ft (195.1 to 198.1 m), 692 to 702 ft (210.9 to 214.0 m), 737 to 747 ft (224.6 to 227.7 m), 768 to 778 ft (234.1 to 237.1 m), 820 to 830 ft (250.0 to 253.0 m).

DATUM.--Altitude of land-surface datum is 28 ft (8.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.65 ft (0.2 m) above land-surface datum.

REMARKS.--Water levels affected by local pumpage.

PERIOD OF RECORD.--January 1977 to February 1982. Unpublished records available November 1955 and March 1970.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 80.0 ft (24.38 m) below land-surface datum, Nov. 10, 1955; lowest measured, 143.56 ft (43.76 m) below land-surface datum, July 22, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, JANUARY TO SEPTEMBER 1977

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 28	135.45	APR 22	139.25	JUL 15	135.35
FEB 25	131.35	MAY 19	138.55	AUG 12	141.95
MAR 25	138.95	JUN 17	140.25	SEP 9	142.85

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	140.40	APR 21	139.00	AUG 14	141.75
NOV 7	143.10	MAY 19	137.02	SEP 8	141.58
DEC 2	142.75	JUN 16	138.45	26	136.55
JAN 3	140.05	JUL 6	123.10	27	138.28
27	140.77	12	137.41	29	139.43
FEB 24	134.81	14	138.84		
MAR 27	140.10	19	140.47		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	139.93	DEC 29	126.97	MAY 21	141.03
6	140.06	JAN 26	138.85	JUN 15	141.65
NOV 3	140.25	FEB 23	139.65	JUL 13	140.13
DEC 1	140.35	MAR 23	139.75	AUG 11	142.85
15	140.77	APR 23	143.05	SEP 7	142.49

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	142.70	JAN 25	140.79	JUN 12	141.12
NOV 2	142.99	FEB 22	140.11	JUL 22	143.56
30	142.74	MAR 21	140.93	SEP 30	141.98
DEC 31	136.30	APR 9	139.55		

KING WILLIAM COUNTY--Continued

373238076481901--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	135.00	APR 8	127.05	AUG 13	134.03
FEB 11	124.22	JUN 5	135.05		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1981 TO FEBRUARY 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	134.50	DEC 1	124.69	FEB 3	125.25

373206076481201. Local number, 56J18.
LOCATION.--Lat 37°32'06", long 76°48'12", Hydrologic Unit 02080106, near State Route 33 at Chesapeake Corporation, northeast corner of 13th and A Streets in Brick pump house. Owner: Chesapeake Corporation of Virginia.
AQUIFER.--Sand and clay of Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 18 in (450 mm) to 180 ft (54.9 m), diameter 8 in (200 mm) from 165 ft to 446 ft (50.3 to 136.0 m), depth 446 ft (136.0 m), screened 210 to 240 ft (64.0 to 73.2 m), 380 to 390 ft (115.8 to 118.9 m), 405 to 445 ft (123.4 to 135.6 m).
DATUM.--Altitude of land-surface datum is 5 ft (1.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.22 ft (0.37 m) above land-surface datum.
REMARKS.--Water levels affected by local pumpage.
PERIOD OF RECORD.--March 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 111.86 ft (34.04 m) below land-surface datum, Dec. 29, 1978; lowest measured, 173.08 ft (52.75 m) below land-surface datum, Feb. 23, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MARCH TO SEPTEMBER 1977

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR 10	155.98	MAY 20	157.88	AUG 12	161.48
22	156.68	JUN 17	158.58	SEP 9	161.88
MAY 2	155.37	JUL 15	153.48		
5	155.91	AUG 10	160.78		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	157.78	FEB 24	115.58	JUL 14	160.38
NOV 7	154.08	MAR 23	159.98	AUG 11	162.78
DEC 2	161.18	APR 21	156.78	SEP 8	163.88
JAN 3	158.48	MAY 19	156.28		
27	160.28	JUN 16	159.58		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	160.68	FEB 23	173.08	JUL 13	162.98
NOV 3	160.60	MAR 27	164.98	AUG 11	165.48
DEC 1	160.48	APR 20	167.35	SEP 7	165.71
29	111.86	MAY 18	161.88		
JAN 26	160.48	JUN 15	160.48		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	166.33	JAN 25	166.00	JUN 12	162.47
NOV 2	166.75	FEB 22	163.76	JUL 21	165.59
30	166.73	MAR 21	163.60	SEP 30	163.16
DEC 31	157.93	APR 9	161.87		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	156.15	APR 8	150.02	AUG 13	153.87
FEB 11	148.26	JUN 5	156.06		

KING WILLIAM COUNTY--Continued

373206076481201--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	151.30	FEB 3	147.06	AUG 16	150.67
DEC 1	146.60	APR 19	147.16		

LOUDOUN COUNTY

391542077423801. Local number, 49Y1.

LOCATION.--Lat 39°15'42", long 77°42'38", Hydrologic Unit 02070008, near Harpers Ferry. Owner: American Telephone and Telegraph Company.

AQUIFER.--Bedrock of Precambrian or Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6.5 in (165 mm). Prior to 1974, diameter reported as 8 in (200 mm). Depth 516 ft (157.3 m), cased to 45 ft (13.7 m), open hole 45 to 516 ft (13.7 to 157.3 m).

DATUM.--Altitude of land-surface datum is 1,100 ft (335 m) National Geodetic Vertical Datum of 1929. Prior to 1974, altitude reported as 940 ft (287 m) above mean sea level. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 22. Recorder removed July 26, 1974; manual measurements thereafter.

PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 48.00 ft (14.63 m) below land-surface datum, June 22, 1972; lowest measured, 61.47 ft (18.74 m) below land-surface datum, Nov. 5, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	60.44	JAN 5	61.00	APR 14	57.98	JUL 13	59.50
NOV 17	61.00	FEB 24	57.80	MAY 25	58.98	AUG 30	61.20

390623077314201. Local number, 50W4C.

LOCATION.--Lat 39°06'23", long 77°31'42", Hydrologic Unit 02070008, east of Highway 7 on east side of town of Leesburg, under water tower. Owner: Town of Leesburg.

AQUIFER.--Slightly metamorphosed Balls Bluff formation of Triassic age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 535 ft (163.00 m), cased to 6 ft (1.83 m), open hole 6 to 535 ft (1.83 to 163.00 m).

DATUM.--Altitude of land-surface datum is 400 ft (122 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum. Measuring point was land-surface datum for the following dates: Oct. 8, 1981, Nov. 18, 1981, and Mar. 23, 1982.

PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.96 ft (10.66 m) below land-surface datum, Apr. 2, 1980; lowest measured, 48.97 ft (14.93 m) below land-surface datum, Feb. 19, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	*46.27	MAR 23	*47.94	SEP 29	43.20
NOV 18	*48.28	JUL 29	38.49		

* See DATUM paragraph above.

LOUISA COUNTY

380217078133701. Local number, 45N1.

LOCATION.--Lat 38°02'17", long 78°13'43", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.

AQUIFER.--Wissahickon formation of Late Precambrian (?) age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 56 ft (17.1 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 500 ft (152 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 1.95 ft (0.59 m) above land-surface datum. Measuring point changed from 3.10 ft (0.94 m) above land-surface datum Mar. 14, 1973.

REMARKS.--Records furnished by the Virginia State Water Control Board. Well reported dry Nov. 30, 1981; cleaned out to a depth of 52 ft (15.8 m) on Dec. 2, 1981.

PERIOD OF RECORD.--July 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.97 ft (3.65 m) below land-surface datum, Apr. 30, 1973; lowest measured, 35.17 ft (10.72 m) below land-surface datum, Dec. 2, 1981.

LOUISA COUNTY--Continued

380217078133701--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

LOWEST RECORDED VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.27	-	35.00	34.93	33.00	30.80	28.58	27.25	26.90	26.46	26.99	27.12
10	34.32	-	35.07	34.67	32.58	30.55	28.25	27.10	26.80	26.35	27.15	27.09
15	34.41	-	35.11	34.40	32.26	30.20	28.00	27.01	26.70	26.42	27.24	27.15
20	34.49	-	35.12	34.15	31.79	29.78	27.75	26.94	26.53	26.46	27.19	27.38
25	34.55	-	35.14	33.90	31.40	29.30	27.55	26.92	26.46	26.63	27.10	27.60
EOM	-	-	35.13	33.66	31.20	28.82	27.43	26.92	26.40	26.75	27.07	27.85

MANUAL MEASUREMENTS

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	34.65	NOV 15	34.80	NOV 27	35.11	DEC 2	35.17
9	34.72	23	34.89	30	*DRY		

* See REMARKS paragraph above.

WTR YR 1982 HIGHEST RECORDED 26.24 JUL 3, 1982 LOWEST MEASURED 35.17 DEC 2, 1981

380043078111301 (revised). Local number, 45N4.
LOCATION.--Lat 38°00'45", long 78°11'14", Hydrologic Unit 02080106, near Thelma, 4 mi (6.4 km) southeast of Boswells Tavern east of U.S. Highway 15. Owner: Virginia Department of Correction.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 200 ft (61.0 m), cased to 42 ft (12.8 m), open hole 42 to 200 ft (12.8 to 61.0 m).
DATUM.--Altitude of land-surface datum is 415 ft (127 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.30 ft (0.70 m) above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.40 ft (2.86 m) below land-surface datum, Apr. 28, 1980; lowest measured, 14.43 ft (4.40 m) below land-surface datum, Aug. 26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	14.08	JAN 27	12.96	APR 28	11.68	JUL 29	13.04
NOV 25	13.91	FEB 25	11.90	MAY 26	12.24	AUG 30	12.87
DEC 22	13.23	MAR 30	11.23	JUN 28	12.30	SEP 29	13.44

380231078132801. Local number, 45N5.
LOCATION.--Lat 38°02'31", long 78°13'28", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 14.15 ft (4.31 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 440 ft (134 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.35 ft (1.02 m) above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft (0.09 m) below land-surface datum, Mar. 27, 1979; lowest measured, 6.81 ft (2.08 m) below land-surface datum, July 31, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	2.35	JAN 27	1.88	APR 28	0.47	JUL 29	5.72
NOV 25	5.96	FEB 25	1.66	MAY 26	2.05	AUG 30	2.71
DEC 22	1.88	MAR 30	1.81	JUN 28	3.07	SEP 29	5.46

380236078132301. Local number, 45N6.
LOCATION.--Lat 38°02'36", long 78°13'23", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 11.75 ft (3.58 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 440 ft (134 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.20 ft (0.98 m) above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.06 ft (0.63 m) below land-surface datum, July 31, 1978; lowest measured, 9.85 ft (3.00 m) below land-surface datum, Sept. 28, 1977.

LOUISA COUNTY--Continued

380236078132301--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	8.30	JAN 27	7.06	APR 28	5.80	JUL 29	7.66
NOV 25	8.33	FEB 25	5.18	MAY 26	6.82	AUG 30	6.86
DEC 22	7.74	MAR 30	4.85	JUN 28	6.62	SEP 29	7.57

380131078001001. Local number, 46N1.
LOCATION.--Lat 38°01'31", long 78°00'10", Hydrologic Unit 02080106, in the town of Louisa. Owner: Town of Louisa.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 132 ft (40.2 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 455 ft (139 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft (0.18 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 56. Recorder removed Apr. 30, 1979; manual measurements thereafter.
PERIOD OF RECORD.--March 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.27 ft (8.01 m) below land-surface datum, May 18, 1973; lowest measured, 34.78 ft (10.60 m) below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	34.30	FEB 22	34.20	MAY 18	32.38	AUG 5	32.09
NOV 21	34.63	MAR 6	33.80	JUN 11	32.25	SEP 22	31.94
DEC 8	34.78	APR 2	33.49	JUL 12	31.98		

MONTGOMERY COUNTY

370812080261901. Local number, 27F2.
LOCATION.--Lat 37°08'12", long 80°26'19", Hydrologic Unit 05050001, in the town of Christiansburg. Owner: Town of Christiansburg.
AQUIFER.--Beekmantown formation of Early Ordovician age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm), depth 450 ft (137.2 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 1,970 ft (600 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.60 ft (0.49 m) below land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 19.
PERIOD OF RECORD.--May 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.98 ft (0.60 m) below land-surface datum, Apr. 14, 1980; lowest recorded, 7.30 ft (2.23 m) below land-surface datum, Dec. 5, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.07	5.94	6.13	6.50	-	5.64	5.90	-	6.20	6.18	6.45	6.24
10	5.90	6.17	5.93	6.47	-	5.90	-	-	5.86	6.26	6.46	6.29
15	6.01	6.07	6.03	6.60	-	6.06	-	6.50	6.17	6.53	6.60	6.54
20	5.80	6.08	6.44	6.62	5.40	6.30	-	-	6.39	6.27	6.72	6.51
25	5.87	5.90	6.32	6.48	5.72	5.64	-	-	6.59	6.57	6.84	6.81
EOM	5.80	5.93	6.22	6.65	5.87	5.64	-	-	6.72	6.40	6.45	6.85

WTR YR 1981 HIGHEST 5.11 FEB 20, 1981 LOWEST 6.94 AUG 28, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.83	6.25	6.60	3.99	2.69	2.90	3.21	4.20	4.51	5.31	5.90	5.89
10	6.98	6.61	6.77	4.50	3.03	2.65	-	4.57	4.46	5.41	4.41	5.98
15	7.00	6.58	6.41	4.66	3.23	2.73	3.84	4.84	3.86	5.50	4.85	5.96
20	7.09	6.63	6.20	4.70	2.72	2.40	4.00	5.00	4.32	5.68	5.11	6.08
25	7.02	6.70	5.60	4.01	3.22	2.64	4.30	4.47	4.81	5.71	5.40	6.07
EOM	6.10	6.78	5.93	4.10	3.20	2.88	3.82	4.46	5.13	5.79	5.69	6.12

WTR YR 1982 HIGHEST 2.20 MAR 7, 1982 LOWEST 7.09 Oct. 20, 21, 1981

NELSON COUNTY

374224078555601. Local number, 39K1.
LOCATION.--Lat 37°42'24", long 78°55'56", Hydrologic Unit 02080203, near Colleen. Owner: P. D. Payne.
AQUIFER.--Lovingston (or Marshall?) formation of Precambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 275 ft (83.8 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 770 ft (234.7 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 6. Recorder removed June 26, 1974; manual measurements thereafter.
PERIOD OF RECORD.--October 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.08 ft (8.25 m) below land-surface datum, June 29, 1973; lowest recorded, 35.66 ft (10.87 m) below land-surface datum, Mar. 7, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	34.28	JAN 5	34.48	APR 15	32.58	JUL 14	32.18
NOV 12	34.48	FEB 25	33.48	MAY 25	32.68	AUG 17	32.26

NEW KENT COUNTY

372428076561501. Local number, 55H1.
LOCATION.--Lat 37°24'28", long 76°56'15", Hydrologic Unit 02080206, Walkers Dam, near Walkers. Owner: City of Newport News.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm) to 145 ft (44.2 m), diameter 4 in (100 mm) from 145 to 630 ft (44.2 to 192.0 m), depth 630 ft (192.0 m), screen (slotted casing) 252 to 257 ft (76.8 to 78.3 m), 339 to 344 ft (103.3 to 104.9 m), 439 to 444 ft (133.8 to 135.3 m), 615 to 625 ft (187.5 to 190.5 m).
DATUM.--Altitude of land-surface datum is 10 ft (3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.8 ft (0.2 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 17. Recorder removed Apr. 5, 1979; manual measurements thereafter.
PERIOD OF RECORD.--March 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 30.24 ft (9.22 m) below land-surface datum, Apr. 10, 1969; lowest measured, 57.43 ft (17.50 m) below land-surface datum, Aug. 30, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	52.08	DEC 9	51.03	MAR 29	51.88	MAY 17	52.02
NOV 20	51.95	FEB 22	51.32	APR 21	52.10	AUG 30	57.43

CITY OF NORFOLK

365223076122101. Local number, 61C1.
LOCATION.--Lat 36°52'23", long 76°12'21", Hydrologic Unit 02080108, Moore's Bridge Filter Plant, Norfolk. Owner: City of Norfolk.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 970 ft (295.7 m), screened 900 to 960 ft (274.3 to 292.6 m).
DATUM.--Altitude of land-surface datum is 10.80 ft (3.29 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.15 ft (0.96 m) above land-surface datum. Measuring point changed from 4.0 ft (1.2 m) above land-surface datum Dec. 15, 1979.
REMARKS.--U.S. Geological Survey test well 1. Water level affected by pumping and recharge operations in nearby wells May 18, 1971, to Nov. 5, 1973. Recorder removed Dec. 15, 1978; manual measurements thereafter.
PERIOD OF RECORD.--January 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.70 ft (4.18 m) below land-surface datum, Feb. 17, 1968; lowest measured, 50.04 ft (15.25 m) below land-surface datum, May 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 16	49.88	MAY 12	50.04	SEP 20	49.74
FEB 3	49.98	JUN 15	49.94		
APR 6	49.80	AUG 19	49.74		

ORANGE COUNTY

381002078094201. Local number, 45P1.
LOCATION.--Lat 38°10'02", long 78°09'42", Hydrologic Unit 02080106. Gordonsville. Owner: M. L. Johnson.
AQUIFER.--Phyllite of Evington group of Cambrian or Precambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 98 ft (29.9 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 480 ft (146 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft (0.1 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 30.
PERIOD OF RECORD.--February 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.83 ft (3.61 m) below land-surface datum, Apr. 10, 1973; lowest recorded, 35.90 ft (10.94 m) below land-surface datum, Jan. 31, 1966.

ORANGE COUNTY--Continued

381002078094201--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	31.97	33.16	34.06	34.68	30.40	31.59	32.12	32.50	33.31	34.40	35.02
10	30.65	32.23	33.29	34.10	34.74	30.77	31.96	32.17	32.57	-	34.60	35.00
15	30.93	32.37	33.42	34.23	34.07	30.91	32.10	32.19	32.77	33.70	34.68	35.00
20	31.20	32.70	33.70	34.33	33.71	31.08	31.93	32.30	32.86	33.82	34.80	35.10
25	31.36	32.83	33.78	34.41	31.20	31.38	31.99	32.27	33.01	34.07	34.96	35.20
EOM	31.69	32.97	33.87	34.58	30.63	31.53	32.03	32.41	33.28	34.34	35.00	35.23

WTR YR 1981 HIGHEST 30.20 MAR 5, 1981 LOWEST 35.25 SEP 29, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	35.30	34.98	35.70	29.60	25.10	21.97	20.34	19.69	23.22	21.78	24.50	25.89
10	35.42	35.20	35.80	28.27	24.31	21.31	20.90	20.48	20.23	22.27	24.11	26.13
15	35.49	35.23	35.79	27.98	24.04	20.98	21.40	21.40	18.70	22.90	24.20	26.40
20	35.60	35.39	34.83	28.10	22.53	20.79	21.70	22.10	18.67	23.30	24.42	26.80
25	35.66	35.58	33.90	27.90	22.69	18.94	22.10	22.73	19.77	23.95	24.80	27.22
EOM	35.10	35.64	32.46	27.83	22.57	19.48	20.30	23.19	20.69	24.21	25.44	27.72

WTR YR 1982 HIGHEST 18.61 JUN 21, 1982 LOWEST 35.86 DEC 13, 1981

PRINCE WILLIAM COUNTY

384931077420301 (revised). Local number, 49U1.

LOCATION.--Lat 38°49'30", long 77°42'08", Hydrologic Unit 02070010, north of State Highway 55 near Thoroughfare Gap, 3.7 mi (6.0 km) west of Haymarket. Owner: Virginia Department of Highways and Transportation.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in (175 mm), depth 345 ft (105.2 m), cased to 20 ft (6.1 m), open hole 20 to 345 ft (6.1 to 105.2 m).

DATUM.--Altitude of land-surface datum is 383 ft (117 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum.

REMARKS.--Recorder removed Feb. 9, 1980; manual measurements thereafter.

PERIOD OF RECORD.--June 1969 to current year. Unpublished records available October 1968 to May 1969.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.59 ft (0.79 m) below land-surface datum, Mar. 19, 1975; lowest recorded, 10.22 ft (3.12 m) below land-surface datum, Nov. 8, 9, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	7.59	FEB 22	3.91	JUL 13	6.77
DEC 28	6.98	MAY 11	4.84	SEP 10	7.75

385607077381101. Local number, 49V1.

LOCATION.--Lat 38°56'07", long 77°38'11", Hydrologic Unit 02070010, north of Haymarket at intersection of State Highways 600 and 615. Owner: J. H. Hutchison.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in (175 mm), depth 165 ft (50.3 m), cased to 10 ft (3.0 m), open hole 10 to 165 ft (3.0 to 50.3 m).

DATUM.--Altitude of land-surface datum is 420 ft (128 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum. Readings from 1979 to 1981 should be 0.7 ft (0.21 m) lower than previously published.

PERIOD OF RECORD.--November 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.85 ft (2.09 m) below land-surface datum, Oct. 12, 1979; lowest recorded, 12.28 ft (3.74 m) below land-surface datum, July 12, 13, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	9.82	10.40	8.51	8.35	8.62	8.91	9.31	9.01	9.89	10.94	11.30
10	10.41	10.19	10.48	8.86	8.18	8.60	8.93	9.60	8.65	10.09	10.15	11.34
15	10.53	10.21	10.46	9.30	8.31	8.59	9.09	9.92	7.82	10.03	10.23	11.55
20	10.67	10.29	9.87	9.62	7.77	8.08	9.28	9.93	8.50	10.46	10.43	11.72
25	10.66	10.41	9.51	9.63	8.15	8.17	9.68	9.93	9.20	10.57	10.80	11.41
EOM	9.68	10.54	9.43	9.73	8.28	8.85	8.89	9.33	9.53	10.70	11.17	11.05

WTR YR 1982 HIGHEST 7.51 FEB 21, 1982 LOWEST 11.72 SEP 20, 1982

PRINCE WILLIAM COUNTY--Continued

383423077245901. Local number, 51S7.
LOCATION.--Lat 38°34'23", long 77°24'59", Hydrologic Unit 02070011, 0.7 mi (1.1 km) southeast of Belfair Crossroads and 700 ft (213.4 m) north of State Highway 619. Owner: National Park Service.
AQUIFER.--Wissahickan formation of Paleozoic age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (150 mm), depth 490 ft (149.4 m), cased to 50 ft (15.2 m), open hole 50 to 490 ft (15.2 to 149.4 m).
DATUM.--Altitude of land-surface datum is 295 ft (90 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--December 1977 to current year. Unpublished records available September 1973 to November 1975.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.27 ft (0.08 m) below land-surface datum, Oct. 11, 1979; lowest measured, 10.95 ft (3.33 m) below land-surface datum, Feb. 9, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 29	10.80	FEB 5	7.16	JUN 21	2.99

PULASKI COUNTY

370516080411501. Local number, 25E2.
LOCATION.--Lat 37°05'16", long 80°41'15", Hydrologic Unit 05050001, in the town of Dublin. Owner: Town of Dublin.
AQUIFER.--Conococheague formation of Late Cambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 370 ft (112.8 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 2,170 ft (661 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum. Measuring point changed from top of recorder shelf, 2.23 ft (0.68 m) above land-surface datum July 21, 1974.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 59. Recorder removed July 21, 1974; manual measurements thereafter.
PERIOD OF RECORD.--April 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.00 ft (18.29 m) below land-surface datum, Mar. 18, 1973; lowest measured, 81.89 ft (24.96 m) below land-surface datum, Sept. 30, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	80.07	JAN 5	65.60	APR 13	77.64	JUL 13	78.25
NOV 9	79.89	FEB 22	70.51	MAY 25	75.60	AUG 24	81.50

CITY OF ROANOKE

371653079552101. Local number, 31G1.
LOCATION.--Lat 37°16'53", long 79°55'21", Hydrologic Unit 03010101, in the city of Roanoke. Owner: Nelson-Roanoke Corporation.
AQUIFER.--Rome formation of Cambrian age. Prior to 1974, reported as Elbrook formation.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 48 ft (14.6 m), length of casing unknown.
DATUM.--Altitude of land-surface datum is 930 ft (283.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.9 ft (0.27 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 8. Recorder removed July 21, 1974; manual measurements thereafter.
PERIOD OF RECORD.--August 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.97 ft (4.56 m) below land-surface datum, June 22, 1972; lowest measured, 23.15 ft (7.06 m) below land-surface datum, May 23, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	18.23	JAN 4	17.09	AUG 23	18.38
NOV 9	16.11	JUL 12	17.86		

ROCKBRIDGE COUNTY

373758079271601. Local number, 35K1.
LOCATION.--Lat 37°37'58", long 79°27'16", Hydrologic Unit 02080202, in the town of Glasgow. Owner: Town of Glasgow.
AQUIFER.--Rome formation of Cambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 700 ft (213.3 m), cased to 101 ft (30.8 m), open hole from 101 to 700 ft (30.8 to 213.3 m).
DATUM.--Altitude of land-surface datum is 745 ft (227 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.6 m) above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 63.
PERIOD OF RECORD.--June 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.92 ft (4.85 m) below land-surface datum, July 8, 1972; lowest recorded, 29.13 ft (8.88 m) below land-surface datum, Dec. 13, 14, 1981.

ROCKBRIDGE COUNTY--Continued

373758079271601--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.78	27.40	27.72	28.20	28.60	27.70	28.16	28.31	27.90	28.14	27.77	28.01
10	26.87	27.51	27.77	28.27	28.63	27.77	28.21	28.38	27.92	27.90	27.56	28.14
15	27.02	27.58	27.84	28.35	28.11	27.83	28.23	28.49	28.05	27.52	27.57	28.22
20	27.12	27.64	28.03	28.41	28.03	27.97	28.11	28.49	28.17	27.50	27.69	28.31
25	27.20	27.67	28.02	28.46	27.70	28.10	28.12	28.47	28.29	27.67	27.81	28.48
EOM	27.30	27.61	28.06	28.58	27.67	28.15	28.22	28.18	28.35	27.73	27.98	28.53

WTR YR 1981 HIGHEST 26.57 OCT 1, 1980 LOWEST 28.63 FEB 9, 10, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.64	28.39	28.99	27.20	25.20	23.65	23.29	24.60	24.82	24.11	25.52	26.65
10	28.78	-	29.09	26.52	24.80	23.19	23.70	24.79	24.53	24.23	25.73	26.80
15	28.86	-	29.10	26.57	24.83	23.17	24.08	25.00	23.00	24.60	25.97	26.99
20	29.00	28.73	28.66	26.71	23.75	22.42	24.30	25.23	23.02	24.80	26.01	27.18
25	29.03	28.83	28.52	26.36	23.91	22.40	24.50	25.38	23.50	25.03	26.20	27.30
EOM	28.40	28.90	28.50	26.29	23.90	22.89	24.47	24.83	23.83	25.26	26.43	27.28

WTR YR 1982 HIGHEST 22.17 MAR 21, 1982 LOWEST 29.13 DEC 13, 14, 1981

ROCKINGHAM COUNTY

382150078424001. Local number, 41Q1.
LOCATION.--Lat 38°21'50", long 78°42'40", Hydrologic Unit 02070005, at Virginia Department of Highways and Transportation garage near McGaheysville. Owner: U.S. Geological Survey.
AQUIFER.--Conococheague limestone of Late Cambrian age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 1/4 in (158 mm), depth 310 ft (94.5 m), cased to 131 ft (39.9 m), open hole 131 to 310 ft (39.9 to 94.5 m).
DATUM.--Altitude of land-surface datum is 1,105 ft (337 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.50 ft (1.07 m) above land-surface datum.
PERIOD OF RECORD.--August 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.38 ft (18.40 m) below land-surface datum, Dec. 26, 1972; lowest recorded, 87.18 ft (26.57 m) below land-surface datum, Oct. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	72.55	74.42	75.67	76.51	71.61	67.68	66.24	66.59	67.46	66.95	68.12	69.77
10	73.22	74.33	76.04	75.13	70.39	67.39	66.43	66.74	67.30	67.21	68.12	70.30
15	73.88	74.37	76.45	74.03	69.77	67.23	66.64	66.97	65.80	67.45	68.25	70.91
20	74.59	74.59	76.78	73.71	68.26	66.99	66.75	67.22	65.93	67.68	68.47	71.58
25	75.24	74.96	76.98	73.56	67.78	65.73	66.91	67.41	66.25	67.84	68.80	72.25
EOM	74.76	75.32	76.84	73.24	67.76	66.05	66.50	67.45	66.59	67.95	69.31	72.76

WTR YR 1982 HIGHEST 65.65 MAR 25, 1982 LOWEST 76.99 DEC 24, 1981

SOUTHAMPTON COUNTY

364109077230701. Local number, 51B3.
LOCATION.--Lat 36°41'09", long 77°23'07", Hydrologic Unit 03010201, 150 ft (45.7 m) east of the intersection of State Highway 615 and U.S. 58, near Adams Grove. Owner: U.S. Geological Survey.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drill observation water well, diameter 4 in (100 mm), depth 253 ft (77.1 m), screened 165 to 175 ft (50.3 to 53.3 m), open hole from 175 to 253 ft (53.3 to 77.1 m).
DATUM.--Altitude of land-surface datum is 126 ft (38.4 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 3.20 ft (0.98 m) above land-surface datum.
PERIOD OF RECORD.--July 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 54.21 ft (16.52 m) below land-surface datum, Apr. 30, 1978; lowest recorded, 60.03 ft (18.30 m) below land-surface datum, Oct. 24, 25, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	59.70	59.73	59.52	58.11	57.10	56.11	56.04	56.15	56.16	56.66	57.07	57.59
10	59.86	59.69	59.45	57.95	56.90	56.03	56.13	56.24	56.16	56.92	57.25	57.83
15	59.90	59.71	59.44	57.81	56.79	56.00	56.13	56.57	56.26	56.80	57.18	57.97
20	59.99	59.64	59.10	57.73	56.37	56.00	56.13	56.70	56.33	56.66	57.02	58.11
25	60.03	59.64	58.87	57.50	56.38	55.95	56.19	56.66	56.45	56.87	57.12	58.20
EOM	59.79	59.62	58.55	57.31	56.33	56.02	56.12	56.12	56.52	57.08	57.32	57.94

WTR YR 1982 HIGHEST 55.94 MAR 26, 1982 LOWEST 60.03 OCT 24, 25, 1981

SOUTHAMPTON COUNTY--Continued

364706077072301. Local number, 54C1.
LOCATION.--Lat 36°47'06", long 77°07'23", Hydrologic Unit 03010201, in the town of Sebrell. Owner: Norfolk and Western Railway.
AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm), depth 344 ft (104.9 m), screen depth unknown.
DATUM.--Altitude of land-surface datum is 58.4 ft (17.8 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.
PERIOD OF RECORD.--1907, July 1938, April 1940 to December 1946, September 1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.00 ft (4.57 m) below land-surface datum, 1907; lowest measured, 97.48 ft (29.71 m) below land-surface datum, Oct. 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	97.48	FEB 19	95.96	MAY 20	95.98	SEP 16	95.82
NOV 13	97.43	MAR 19	95.87	JUL 15	95.70		
DEC 14	97.32	APR 22	95.86	AUG 16	95.56		

CITY OF SUFFOLK

363834076382301 (revised). Local number, 57B8.
LOCATION.--Lat 36°38'27", long 76°38'05", Hydrologic Unit 03010205, 0.3 mi (0.48 km) southwest of State Highway 664 and 0.8 mi (1.29 km) east of U.S. Highway 13. Owner: Soren F. Andresen.
AQUIFER.--Sand of Chesapeake group.
WELL CHARACTERISTICS.--Drilled flowing water well, diameter 2 in (50 mm), depth 65 ft (19.8 m), screened 50 to 65 ft (15.2 to 19.8 m).
DATUM.--Altitude of land-surface datum is 45 ft (13.7 m) National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.
REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 1.20 ft (0.37 m) higher than previously published.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.51 ft (1.98 m) above land-surface datum, Mar. 9, 1979; lowest measured, at land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 16	3.56	FEB 3	6.30	APR 7	5.80	AUG 19	5.85

NOTE.--Flowing well, readings given are above land-surface datum.

363810076381001. Local number, 57B9.
LOCATION.--Lat 36°38'36", long 76°38'10", Hydrologic Unit 03010205, 0.2 mi (0.32 km) southwest of State Highway 664, 0.7 mi (1.13 km) southeast of U.S. Highway 13, and 6.7 mi (10.8 km) southwest of Suffolk. Owner: Soren Andresen.
AQUIFER.--Sand of Chesapeake group.
WELL CHARACTERISTICS.--Drilled flowing unused water well, diameter 1.25 in (32 mm), depth 85 ft (25.9 m), screened 70 to 85 ft (2.13 to 25.9 m).
DATUM.--Altitude of land-surface datum is 45 ft (13 m) National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.
REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 0.78 ft (0.24 m) higher than previously published.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.63 ft (1.72 m) above land-surface datum, Mar. 9, 1979; lowest measured, 0.22 ft (0.07 m) below land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 16	2.77	FEB 3	5.60	APR 7	4.64	AUG 19	4.98

NOTE.--Flowing well, readings given are above land-surface datum.

363353076331701. Local number, 58A23.
LOCATION.--Lat 36°33'53", long 76°33'17", Hydrologic Unit 03010205, 200 ft (61.0 m) north of State Highway 678, 400 ft (121.9 m) west of State Highway 604, and 12.1 mi (19.5 km) south of Suffolk. Owner: Raymond R. Brinkley.
AQUIFER.--Sand of undifferentiated Paleocene age.
WELL CHARACTERISTICS.--Drilled used water well, diameter 4 in (100 mm) to 80 ft (24.4 m), 2 in (50 mm) from 80 to 420 ft (24.4 to 128.0 m), depth 420 ft (128.0 m), screened 410 to 420 ft (125.0 to 128.0 m).
DATUM.--Altitude of land-surface datum is 60 ft (18 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.67 ft (0.2 m) above land-surface datum.
REMARKS.--Water level affected by pumpage.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.56 ft (9.92 m) below land-surface datum, May 31, 1978; lowest measured, 46.66 ft (14.22 m) below land-surface datum, Nov. 6, 1981.

CITY OF SUFFOLK--Continued

363353076331701--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 6	46.66	FEB 12	43.29	JUL 6	43.27
DEC 28	43.12	MAR 9	43.92		

363928076332901. Local number, 58B13.
LOCATION.--Lat 36°39'28", long 76°33'29", Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 15 ft (4.6 m).
DATUM.--Altitude of land-surface datum is 40 ft (12 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--August 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.95 ft (0.90 m) below land-surface datum, May 25, 1979; lowest recorded, 13.44 ft (4.10 m) below land-surface datum, Jan. 23-26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	12.45	12.83	13.01	11.21	8.67	5.89	6.99	8.12	8.92	9.52	9.66	9.62
10	12.52	12.86	13.03	10.26	8.16	5.22	7.28	8.36	8.62	9.65	9.91	9.84
15	12.60	12.89	13.06	10.07	7.40	5.89	7.66	8.68	8.90	9.60	8.73	10.07
20	12.67	12.92	13.00	9.89	5.79	5.84	7.87	8.95	8.88	9.65	8.69	10.26
25	12.74	12.96	12.79	9.08	6.46	5.99	8.13	8.98	9.08	9.81	8.92	10.24
EOM	12.79	12.98	12.29	8.62	5.76	6.54	8.03	8.87	9.25	9.96	9.35	9.41

WTR YR 1982 HIGHEST 4.78 MAR 7, 1982 LOWEST 13.06 DEC 15-18, 1981

363921076331601. Local number, 58B14.
LOCATION.--Lat 36°39'21", long 76°33'16", Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 9.30 ft (2.83 m).
DATUM.--Altitude of land-surface datum is 30 ft (9 m) National Geodetic Vertical Datum of 1929. Measuring point: Inside edge of casing, 2.5 ft (0.8 m) above land-surface datum. Prior to 1978, measuring point reported as 2.7 ft (0.8 m) above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft (0.09 m) below land-surface datum, Jan. 26, 1978; lowest measured, water level below bottom of casing, Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	5.17	APR 12	3.74	JUL 6	3.46	SEP 28	2.81
FEB 12	2.04	MAY 3	1.29	AUG 2	1.74		
MAR 9	1.09	JUN 10	2.56	AUG 30	3.69		

363925076331701. Local number, 58B15.
LOCATION.--Lat 36°39'25", long 76°33'43" (revised), Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk off State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 6.6 ft (2.0 m), sounded Feb. 3, 1982.
DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Inside edge of casing, 1.4 ft (0.4 m) above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.98 ft (0.30 m) below land-surface datum, Jan. 26, 1978; lowest measured, below bottom of well at times each year.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	6.28	JUL 6	3.01	AUG 30	4.19
DEC 28	3.58	AUG 2	3.15	SEP 28	4.09

CITY OF SUFFOLK--Continued

363902076331901. Local number, 58B48.
LOCATION.--Lat 36°39'02", long 76°33'19", Hydrologic Unit 03010205, 4 mi (6.4 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Quaternary age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 7 ft (2.1 m).
DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of inside edge of casing, 1.40 ft (0.43 m) above land-surface datum.
PERIOD OF RECORD.--May 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft (0.06 m) below land-surface datum, May 31, 1978; lowest measured, below bottom of well Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	6.27	MAR 9	0.77	JUN 10	3.04	AUG 30	3.57
DEC 28	2.40	APR 12	2.44	JUL 6	4.97	SEP 28	3.37
FEB 12	1.57	MAY 3	3.60	AUG 2	3.66		

364301076314801. Local number, 58B114.
LOCATION.--Lat 36°43'30", long 76°31'48", Hydrologic Unit 03010205, at the intersection of Jericho Lane and Jericho Ditch in the Great Dismal Swamp. Owner: U.S. Fish and Wildlife.
AQUIFER.--Sand of Late Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm) to 61.8 ft (18.8 m), 2 in (50 mm) from 61.8 to 569.9 ft (18.8 to 173.7 m), depth 569.9 ft (173.7 m), screened 559.9 to 569.9 ft (170.7 to 173.7 m).
DATUM.--Altitude of land-surface datum is 25 ft (7 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.7 ft (0.2 m) above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 76.29 ft (23.25 m) below land-surface datum, May 21, 1976; lowest measured, 98.02 ft (29.88 m) below land-surface datum, July 16, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 28	91.57	MAR 9	89.22	JUL 21	89.96	AUG 30	89.48
FEB 12	89.75	JUN 4	89.62	AUG 3	89.64	SEP 28	89.23

364330076345101 (revised). Local number, 58B235.
LOCATION.--Lat 36°43'30" (revised), long 76°34'51", Hydrologic Unit 02080208, in the Planters Plant in the city of Suffolk. Owner: Planters Peanut Company.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm) to 254 ft (77.4 m), 8 in (200 mm) from 254 to 422 ft (77.4 to 128.6 m), 6 in (150 mm) from 422 to 570.0 ft (128.6 to 173.7 m), depth 570 ft (173.7 m), screened 530 to 561.6 ft (161.5 to 171.2 m).
DATUM.--Altitude of land-surface datum is 53 ft (16 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.50 ft (0.76 m) above land-surface datum.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.25 ft (38.18 m) below land-surface datum, Apr. 2, 1980; lowest measured, 142.30 ft (43.37 m) below land-surface datum, July 2, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 16	136.68	FEB 3	127.52	APR 7	126.19	SEP 20	129.12

SURRY COUNTY

370408076460101. Local number, 56E1.
LOCATION.--Lat 37°04'08", long 76°40'01" (revised), Hydrologic Unit 03010202, on State Highway 617, 3.2 mi (5.1 km) southwest of Bacons Castle. Owner: Buster E. Cox.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 18 in (450 mm) to 360 ft (109.7 m), 8 in (200 mm) from 333.5 to 705 ft (101.7 to 214.9 m), depth 705 ft (214.9 m), screened 401 to 411 ft (122.2 to 125.3 m), 431 to 441 ft (131.4 to 134.4 m), 463 to 473 (141.1 to 144.2 m), 495 to 505 ft (150.9 to 153.9 m), 540 to 555 ft (164.6 to 169.2 m), 700 to 705 ft (213.4 to 214.9 m).
DATUM.--Altitude of land-surface datum is 93 ft (28 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.6 ft (1.1 m) above land-surface datum.
PERIOD OF RECORD.--March 1942, April 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 73.52 ft (22.41 m) below land-surface datum, Mar. 10, 1942; lowest recorded, 148.48 ft (45.26 m) below land-surface datum, Nov. 12, 13, 1981.

SURRY COUNTY--Continued

370408076460101--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	148.20	148.40	148.21	147.83	-	-	-	147.15	146.91	147.49	147.90	148.24
10	148.33	148.45	148.17	147.80	-	-	147.20	147.13	147.00	147.57	-	148.30
15	148.41	148.36	148.11	147.74	-	-	147.23	147.16	147.01	147.57	-	148.35
20	148.43	148.23	148.11	147.79	-	-	147.19	147.13	147.09	147.64	147.91	148.35
25	148.46	148.34	148.06	147.68	-	-	147.21	146.89	147.23	147.76	147.99	148.35
EOM	148.44	148.31	148.03	147.71	-	-	147.16	146.92	147.31	147.81	148.17	148.28

WTR YR 1982 HIGHEST 146.84 MAY 25, 1982 LOWEST 148.48 NOV 12, 13, 1981

WESTMORELAND COUNTY

381110076550501. Local number, 55P5.
LOCATION.--Lat 38°11'10", long 76°55'05", Hydrologic Unit 02070011, behind craft shop at George Washington birthplace. Owner: National Park Service.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 471 ft (143.6 m), screened 451 to 466 ft (137.5 to 142.0 m).
DATUM.--Altitude of land-surface datum is 24 ft (7 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 3.0 ft (0.9 m) above land-surface datum.
PERIOD OF RECORD.--June 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.05 ft (7.63 m) below land-surface datum, June 24, 1974; lowest recorded, 36.00 ft (10.97 m) below land-surface datum, Sept. 11, 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	-	35.00	34.99	35.30	34.94	35.22	35.21	35.04	-	-	35.84
10	-	-	35.33	35.50	35.35	35.15	35.43	35.24	34.95	-	-	35.99
15	-	-	34.90	35.07	35.21	35.10	35.30	35.13	-	-	-	-
20	-	34.67	35.37	35.42	34.86	34.90	35.18	35.32	-	-	35.69	-
25	-	34.95	35.14	35.24	35.17	34.83	35.28	35.44	-	-	35.60	-
EOM	-	35.14	35.11	35.31	35.20	35.19	35.12	35.16	-	-	35.75	-

WTR YR 1982 HIGHEST 34.25 NOV 27, 1981 LOWEST 36.00 SEP 11, 12, 1982

381132076551001. Local number, 55P9.
LOCATION.--Lat 38°11'32", long 76°55'10", Hydrologic Unit 02080104, 0.6 mi (0.97 km) north of the end of State Highway 204, off of State Highway 3 at George Washington Birthplace National Monument. Owner: National Park Service.
AQUIFER.--Sand of Quaternary age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 36 in (900 mm), depth 22.6 ft (6.9 m).
DATUM.--Altitude of land-surface datum is 17 ft (5.2 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of concrete lip on casing, 1.65 ft (0.50 m) above land-surface datum.
PERIOD OF RECORD.--July 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.11 ft (0.03 m) below land-surface datum, Oct. 11, 1979; lowest measured, 11.38 ft (3.47 m) below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	10.97	FEB 3	4.21	AUG 16	7.13
DEC 1	11.38	APR 19	.65		

380538076490801. Local number, 56N1.
LOCATION.--Lat 38°05'38", long 76°49'08", Hydrologic Unit 02080104, at Washington and Lee School near Montross. Owner: Westmoreland County Public Schools.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm) to 189 ft (57.6 m), 2 in (50 mm) from 189 to 641 ft (57.6 to 195.4 m), depth 641 ft (195.4 m), screened 608 to 628 ft (185.3 to 191.4 m).
DATUM.--Altitude of land-surface datum is 149 ft (45 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.2 ft (0.4 m) above land-surface datum. Top of casing previously reported as 1 ft (0.3 m).
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 16. Recorder removed Mar. 31, 1979; manual measurements thereafter.
PERIOD OF RECORD.--August 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 133.47 ft (40.68 m) below land-surface datum, Aug. 28, 1967; lowest measured, 157.20 ft (47.91 m) below land-surface datum, Jan. 28, 1980.

WESTMORELAND COUNTY--Continued

380538076490801--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	154.01	MAR 13	152.78	MAY 20	153.20	JUL 21	153.91
NOV 19	153.31	APR 6	152.69	JUN 3	153.40		

YORK COUNTY

371916076375901. Local number, 57G2.

LOCATION.--Lat 37°19'16", long 76°37'59", Hydrologic Unit 02080107, at Building 3101, Camp Peary, Williamsburg. Owner: Camp Peary Naval Reservation.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 10 in (250 mm) to 352 ft (107.3 m), diameter 8 in (200 mm) from 352 to 387 ft (107.3 to 118.0 m), depth 387 ft (118.0 m).

DATUM.--Altitude of land-surface datum is 15 ft (4.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft (0.06 m) above land-surface datum. Prior to May 1981, measuring point at land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board from January 1968 to September 1975.

PERIOD OF RECORD.--January 1968 to September 1975, May 1981 to current year. Unpublished record available January to August 1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.09 ft (13.13 m) below land-surface datum, Mar. 7, 1968; lowest recorded, 81.65 ft (24.89 m) below land-surface datum, Sept. 25, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MAY TO SEPTEMBER 1981
LOWEST VALUES

DAY	MAY	JUN	JUL	AUG	SEP
5	-	77.54	78.89	80.29	80.66
10	-	77.43	79.04	80.38	81.12
15	-	77.73	79.33	80.81	81.51
20	76.66	78.08	78.89	80.19	81.53
25	76.65	78.50	80.05	80.84	81.65
EOM	77.21	78.78	80.39	80.82	81.43

MAY TO SEPTEMBER 1981 HIGHEST 75.55 MAY 19, 1981
LOWEST 81.65 SEP 25, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	81.34	81.14	80.09	79.33	78.51	77.88	76.96	77.96	78.59	79.03	80.74	80.94
10	81.29	81.22	80.16	79.32	78.27	78.01	76.94	78.09	78.50	79.27	81.20	80.97
15	81.26	80.34	79.70	78.79	78.14	77.52	77.03	78.30	78.74	79.52	81.06	80.86
20	81.42	80.39	79.99	78.88	77.60	76.89	77.38	78.87	78.79	79.78	81.15	80.69
25	81.11	80.13	79.52	78.88	77.84	76.88	77.97	78.76	79.09	79.88	80.87	80.68
EOM	80.79	80.26	79.21	78.51	78.02	76.99	77.78	78.72	78.89	80.35	81.02	80.41

WTR YR 1982 HIGHEST 75.59 MAR 25, 1982 LOWEST 81.45 OCT 1, 1981

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

LOCAL IDENT-I-FIER	STATION NUMBER	GEO-LOGIC UNIT	DATE OF SAMPLE	DEPTH OF WELL, TOTAL (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	HARD-NESS (MG/L AS CACO3)	HARDNESS NONCAR-BONATE (MG/L AS CACO3)
					BUCHANAN					
14E 26	370527082022902	324NRTN	81-10-14	104	--	7.2	13.0	--	490	100
14E 37	370527082022903	324NRTN	81-10-14	582	750	8.2	14.0	--	8	.00
14E 39	370527082022905	324NRTN	81-10-13	243	280	8.1	13.0	--	100	.00
14E 40	370443082022301	324NRTN	82-08-25	60	222	6.1	15.0	--	75	.00
14E 41	370443082022302	324NRTN	82-08-26	126	295	7.5	13.1	--	82	.00
14E 43	370552082022101	324NRTN	81-10-15	--	190	6.9	14.5	--	51	.00
14E 44	370443082022304	110QRNR	82-08-26	5	205	6.6	22.5	--	61	.00
					GLOUCESTER					
58H 4	372331076312604	217PTXN	82-08-25	1320	2900	7.4	20.5	22	23	.00

LOCAL IDENT-I-FIER	DATE OF SAMPLE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)
					BUCHANAN						
14E 26	81-10-14	622	--	.06	--	--	--	<100	--	--	--
14E 37	81-10-14	458	--	.03	--	--	--	50	--	--	--
14E 39	81-10-13	160	--	1.6	--	--	--	20	--	--	--
14E 40	82-08-25	133	--	--	--	--	--	<100	--	--	--
14E 41	82-08-26	154	--	--	--	--	--	<100	--	--	--
14E 43	81-10-15	109	--	.28	--	--	--	1400	--	--	--
14E 44	82-08-26	106	--	--	--	--	--	200	--	--	--
					GLOUCESTER						
58H 4	82-08-25	1870	<.010	<.10	6.40	.070	.060	100	1	1	100

LOCAL IDENT-I-FIER	DATE OF SAMPLE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)
					BUCHANAN					
14E 26	81-10-14	1900	--	--	1400	1300	--	--	--	--
14E 37	81-10-14	50	--	--	30	11	--	--	--	--
14E 39	81-10-13	9	--	--	20	19	--	--	--	--
14E 40	82-08-25	6600	--	--	330	330	--	--	--	--
14E 41	82-08-26	5700	--	--	180	150	--	--	--	--
14E 43	81-10-15	2400	--	--	260	270	--	--	--	--
14E 44	82-08-26	580	--	--	420	210	--	--	--	--
					GLOUCESTER					
58H 4	82-08-25	2700	3	3	40	40	.2	.2	2	1

GEOLOGIC UNIT (AQUIFER):

110QRNR - ALLUVIUM, QUATERNARY AGE
217PTXN - POTOMAC GROUP, LOWER CRETACEOUS AGE
324NRTN - NORTON FORMATION, PENNSYLVANIAN AGE

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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

LOCAL IDENT-I-FIER	DATE OF SAMPLE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
					BUCHANAN						
14E 26	81-10-14	110	52	32	10	390	150	10	.7	19	671
14E 37	81-10-14	2.2	.7	170	1.5	220	110	10	.6	11	442
14E 39	81-10-13	27	7.8	18	3.7	130	3.3	.6	.2	20	159
14E 40	82-08-25	20	6.2	12	1.1	75	21	4.8	--	15	140
14E 41	82-08-26	23	6.0	18	6.9	112	12	9.0	--	6.4	149
14E 43	81-10-15	13	4.4	15	.8	73	7.7	1.3	.2	18	97
14E 44	82-08-26	14	6.3	4.8	3.2	83	10	7.4	--	7.7	117
					GLOUCESTER						
58H 4	82-08-25	6.0	2.0	720	12	449	85	750	1.8	22	1900

LOCAL IDENT-I-FIER	DATE OF SAMPLE	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
					BUCHANAN						
14E 26	81-10-14	--	--	--	--	--	--	--	--	--	3100
14E 37	81-10-14	--	--	--	--	--	--	--	--	--	2000
14E 39	81-10-13	--	--	--	--	--	--	--	--	--	380
14E 40	82-08-25	--	--	--	--	--	--	--	--	--	6500
14E 41	82-08-26	--	--	--	--	--	--	--	--	--	14000
14E 43	81-10-15	--	--	--	--	--	--	--	--	--	3300
14E 44	82-08-26	--	--	--	--	--	--	--	--	--	38000
					GLOUCESTER						
58H 4	82-08-25	100	2	<1	10	10	1	<1	8	3	5000

LOCAL IDENT-I-FIER	DATE OF SAMPLE	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
					BUCHANAN			
14E 26	81-10-14	--	--	--	--	840	--	--
14E 37	81-10-14	--	--	--	--	95	--	--
14E 39	81-10-13	--	--	--	--	1200	--	--
14E 40	82-08-25	--	--	--	--	--	--	--
14E 41	82-08-26	--	--	--	--	--	--	--
14E 43	81-10-15	--	--	--	--	160	--	--
14E 44	82-08-26	--	--	--	--	--	--	--
					GLOUCESTER			
58H 4	82-08-25	<1	<1	<1	<1	--	120	40

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^{2})
	4.047×10^{-1}	square hectometers (hm^{2})
	4.047×10^{-3}	square kilometers (km^{2})
square miles (mi^{2})	2.590×10^{0}	square kilometers (km^{2})
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^{3})
	3.785×10^{-3}	cubic meters (m^{3})
million gallons	3.785×10^{3}	cubic meters (m^{3})
	3.785×10^{-3}	cubic hectometers (hm^{3})
cubic feet (ft^{3})	2.832×10^{1}	cubic decimeters (dm^{3})
	2.832×10^{-2}	cubic meters (m^{3})
cfs-days	2.447×10^{3}	cubic meters (m^{3})
	2.447×10^{-3}	cubic hectometers (hm^{3})
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^{3})
	1.233×10^{-3}	cubic hectometers (hm^{3})
	1.233×10^{-6}	cubic kilometers (km^{3})
	Flow	
cubic feet per second (ft^{3}/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^{3}/s)
	2.832×10^{-2}	cubic meters per second (m^{3}/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^{3}/s)
	6.309×10^{-5}	cubic meters per second (m^{3}/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^{3}/s)
	4.381×10^{-2}	cubic meters per second (m^{3}/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons